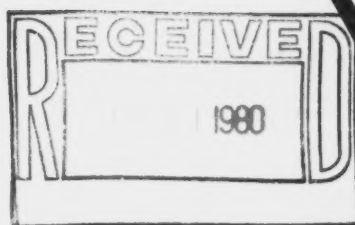


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Arkansas Business and Economic Review



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Fall 1979

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Arkansas Business and Economic Review

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PERSONAL AND DISPOSABLE INCOMES OF ARKANSAS AND SELECTED STATES, 1967-1977

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Per capita personal income and per capita disposable income are generally recognized as gauges of individual economic well-being when studying the economic characteristics of an area. Both values are derived from the area's total personal income.¹

The purpose of this study was to compare per capita incomes, both personal and disposable, during the 1967-1977 period in Arkansas with those in the United States, in the individual states of the Southeast, and in Arkansas' contiguous states. Per capita *Personal Income* (Personal Income) and per capita *Disposable Personal Income* (Disposable Income) data for the United States as a whole and the individual states are available from 1967 through 1977. In order to make the data more meaningful, the 1967-1977 income growth rates, in current (Table 1) and constant dollars (Table 2), and the relative values were computed for Arkansas and the United States and for Arkansas and the indicated states. Furthermore, purchasing power as a percentage of Personal Income was calculated for Arkansas, for the United States as a whole, and for each of the individual states in the specified areas (Table 3).

Per Capita Income Growth

Arkansas, her contiguous states, and the other states both in the Southeast and in the United States all experienced significant increases in both Personal Income and Disposable Income during the 1967-1977 period; however, those increases reflected inflation to a large extent. For instance, Arkansas' Personal Income in current dollars increased 151.5 percent from \$2,176 in 1967 to \$5,473 in 1977. But when those data are adjusted by the Consumer Price Index² to constant dollars, approximately 74 percent of the \$3,297 increase was due to inflation; thus, the real gain in Arkansas' Personal Income was \$839 or 38.6 percent. Similarly, approximately 76 percent of the \$2,863 increase in Arkansas' Disposable Income between 1967 and 1977 was caused by inflation; the real gain, then, was \$697 or 35.5 percent. These data are contained in Tables 1 and 2.

Figures 1(a) and (b) indicate comparisons of growth for the 1967-1977 period in both Personal Income and Disposable Income in Arkansas, in the United States, in

Table 1

DOLLAR AMOUNT, PERCENTAGE CHANGE IN PER CAPITA PERSONAL INCOME,
AND RELATIVE PERCENTAGE CHANGE IN PER CAPITA PERSONAL INCOME
1967 - 1977

States	1967 ¹		1977		Arkansas Relative to Other States	
	Current Dollars		Constant Dollars (1967 = Base Year)		1967	1977
	Amount ¹	% Change From 1967	Amount	% Change From 1967		
U.S.	\$ 3,142	\$ 7,042	124.1	\$ 3,879	23.5	69.3% 77.7%
SOUTHEAST	2,494	6,089	144.1	3,355	34.5	87.2 89.9
Alabama	2,245	5,664	152.3	3,121	39.0	96.9 96.6
Arkansas	2,176	5,473	151.5	3,015	38.6	- -
Florida	2,816	6,728	138.9	3,707	31.5	77.3 81.3
Georgia	2,573	6,058	135.4	3,338	29.7	84.6 90.3
Kentucky	2,403	5,957	147.9	3,282	36.6	90.6 91.9
Louisiana	2,501	5,989	139.5	3,299	31.9	87.0 91.4
Mississippi	1,957	5,028	156.9	2,770	41.6	111.2 108.9
North Carolina	2,479	5,929	139.1	3,266	31.8	87.8 92.3
South Carolina	2,280	5,653	147.9	3,115	36.6	95.4 96.8
Tennessee	2,426	5,874	142.1	3,236	33.4	89.7 93.2
Virginia	2,862	6,924	141.9	3,814	33.3	76.0 79.0
West Virginia	2,378	6,000	152.3	3,306	39.0	83.1 91.2
CONTIGUOUS STATES:	2,552	6,126	140.0	3,375	32.3	85.3 89.3
Louisiana	2,501	5,989	139.5	3,299	31.9	87.0 91.4
Mississippi	1,957	5,028	156.9	2,770	41.6	111.2 108.9
Missouri	2,998	6,565	119.0	3,617	20.6	72.6 83.4
Oklahoma	2,650	6,409	141.8	3,531	33.3	82.1 85.4
Tennessee	2,426	5,874	142.1	3,236	33.4	89.7 93.2
Texas	2,780	6,891	147.9	3,797	36.6	78.3 79.4

¹U.S. Department of Commerce, Regional Economics Information System, Bureau of Economic Analysis, Washington, D.C.

Table 2

DOLLAR AMOUNT, PERCENTAGE CHANGE IN PER CAPITA DISPOSABLE
PERSONAL INCOME, AND RELATIVE PERCENTAGE CHANGE IN
PER CAPITA DISPOSABLE PERSONAL INCOME, 1967 - 1977

States	1967 ¹	1977				Arkansas Relative to Other States	
		Current Dollars		Constant Dollars (1967 = Base Year)		1967	1977
		Amount ¹	% Change From 1967	Amount	% Change From 1967		
U.S.	\$ 2,728	\$ 5,991	119.6	\$ 3,301	21.0	71.9 %	80.5 %
SOUTHEAST	2,202	5,232	137.6	2,883	30.9	89.1	92.2
Alabama	1,989	4,844	143.5	2,669	34.2	98.6	99.6
Arkansas	1,961	4,824	146.0	2,658	35.5	-	-
Florida	2,467	5,809	135.5	3,201	29.7	79.5	83.0
Georgia	2,264	5,161	128.0	2,844	25.6	86.6	93.5
Kentucky	2,119	5,173	144.1	2,850	34.5	92.5	93.3
Louisiana	2,228	5,107	129.2	2,814	26.3	88.0	94.5
Mississippi	1,764	4,397	149.3	2,423	37.3	111.2	109.7
North Carolina	2,196	5,133	133.7	2,828	28.8	89.3	94.0
South Carolina	2,016	4,878	142.0	2,687	33.3	97.3	98.9
Tennessee	2,163	5,069	134.3	2,793	29.1	90.7	95.2
Virginia	2,483	5,808	133.9	3,200	28.9	79.0	83.1
West Virginia	2,095	5,140	145.3	2,831	35.2	93.6	93.9
CONTIGUOUS STATES:	2,257	5,267	133.4	2,902	28.6	86.9	91.6
Louisiana	2,228	5,107	129.2	2,814	26.3	88.0	94.5
Mississippi	1,764	4,397	149.3	2,423	37.3	111.2	109.7
Missouri	2,604	5,716	119.5	3,149	20.9	75.3	84.4
Oklahoma	2,334	5,416	132.0	2,984	27.8	84.0	89.1
Tennessee	2,163	5,069	134.3	2,793	29.1	90.7	95.2
Texas	2,448	5,898	140.9	3,250	32.7	80.1	81.8

¹U.S. Department of Commerce, Regional Economics Information System, Bureau of Economic Analysis, Washington, D.C.

FIGURE 1(a)

REAL PER CAPITA PERSONAL INCOME GROWTH,
ARKANSAS, CONTIGUOUS STATES,
THE SOUTHEAST, AND THE U.S.,
1967-1977

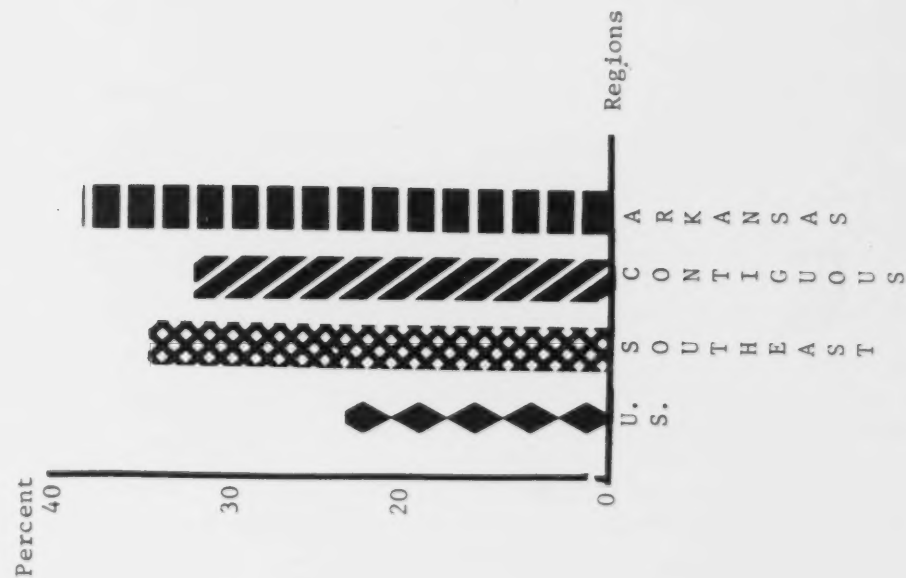
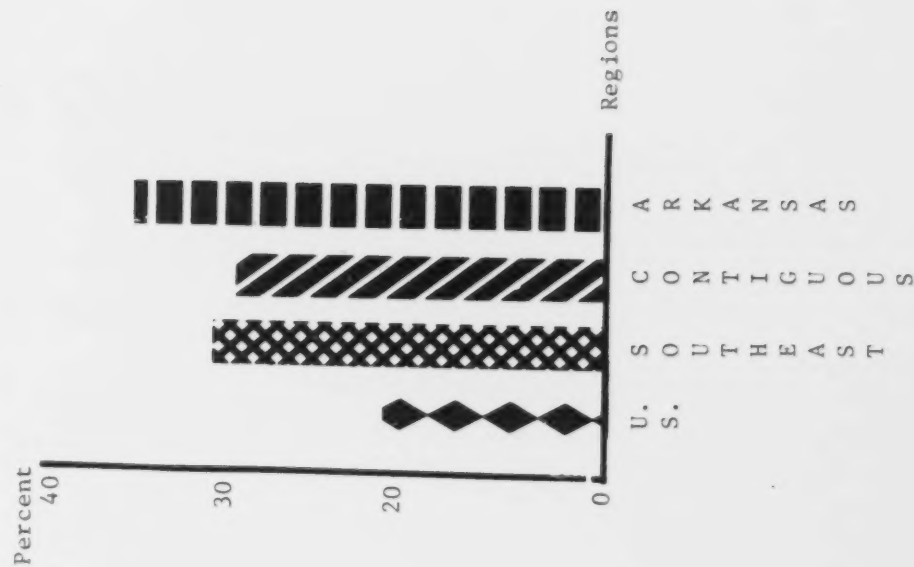


FIGURE 1(b)

REAL PER CAPITA DISPOSABLE PERSONAL INCOME GROWTH,
ARKANSAS, CONTIGUOUS STATES,
THE SOUTHEAST, AND THE U.S.,
1967-1977



the Southeast, and in the contiguous states. The real gain for the entire United States during this period was 23.5 percent in Personal Income and 21 percent in Disposable Income. The average real increases in Personal Income and in Disposable Income, during the same period, was 32.3 percent and 28.6 percent respectively for the contiguous states, and 34.5 percent and 30.9 percent respectively for the Southeast region. Thus, growth in these two per capita incomes in Arkansas has been significantly higher than the average increase in the nation as a whole, in the Southeast states, or in the neighboring states. These comparative data are shown in Tables 1 and 2.

Absolute Per Capita Income

The rates of growth of both the Arkansas Personal and Disposable Incomes during the 1967-1977 period exceeded those of the United States, of the Southeast and of the neighboring states. But the absolute gap between Arkansas and the latter group narrowed only slightly. Paradoxically, the absolute Personal Income gaps between Arkansas and the Southeast group of states widened despite Arkansas' higher growth rate.

Figures 2(a) and (b) compare the 1967-1977 Personal and Disposable Incomes in Arkansas with those of the United States, the Southeast, and the contiguous states. In 1967, Arkansas incomes lagged the national averages by \$966 in Personal Income and by \$241 in Disposable Income; by 1977, the gaps, measured in 1967 dollars, had narrowed to \$864 and \$225 respectively. Compared to her contiguous states in 1967, Arkansas had \$376 less in Personal Income and \$296 less in Disposable Income; the respective differences in constant dollars in 1977 had decreased to \$360 and to \$244. Between Arkansas and the entire Southeast, the constant dollar gap in Disposable Income narrowed from \$241 in 1967 to \$225 in 1977, while that in Personal Income increased from \$318 in 1967 to \$340 in 1977.

During the 1967-1977 period, Personal and Disposable Incomes in Arkansas increased slightly relative to those in the United States, and in the individual states of the com-

pared state groups except in Mississippi. For instance, the Disposable Income in Arkansas relative to that in the United States increased from 71.9 percent in 1967 to 80.5 percent in 1977. These relative data are contained in Tables 1 and 2 and exhibited in Figures 3(a) and (b).

Per Capita Disposable Personal Income vs. Per Capita Personal Income

Disposable Income is perhaps a better measure of economic growth than Personal Income which includes taxes, in particular, income taxes which usually represent a relatively large claim against the individual's Personal Income. Disposable Income also better reflects change in the net economic well-being of the individual. In short, it represents the amount of income that an individual spends as he or she pleases. The higher the ratio of Disposable Income to Personal Income, the greater will be the average for individual purchasing power.

Arkansans' Disposable Income relative to Personal Income was 90.1 percent in 1967—the second highest ratio (next to that in Mississippi) among her contiguous states and the Southeast states. This ratio decreased slightly to 88.1 percent in 1977, but still became the highest ratio among the states in both regions. These data are tabulated in Table 3 and exhibited in Figure 4.

Summary

During the 1967-1977 period, Arkansans experienced significant increases in both Personal and Disposable Incomes; the real gains were 38.6 percent and 35.5 percent respectively. Notwithstanding these gains, the absolute dollar gaps between incomes in Arkansas and in the United States, in the Southeast and in the contiguous states had only narrowed slightly. In 1977, Arkansas Disposable Income relative to that of the United States, the Southeast, and the contiguous states was 80.5 percent, 92.2 percent, and 91.6 percent respectively. In terms of Disposable Income relative to Personal Income, in 1977, Arkansas had the highest ratio compared to that in the United States, in all states in the Southeast and in the neighboring states.

FIGURE 2(a)

THE 1967-1977 PER CAPITA PERSONAL INCOME
OF ARKANSAS AND HER CONTIGUOUS STATES,
THE SOUTHEAST, AND THE U.S.

(Constant Dollars)

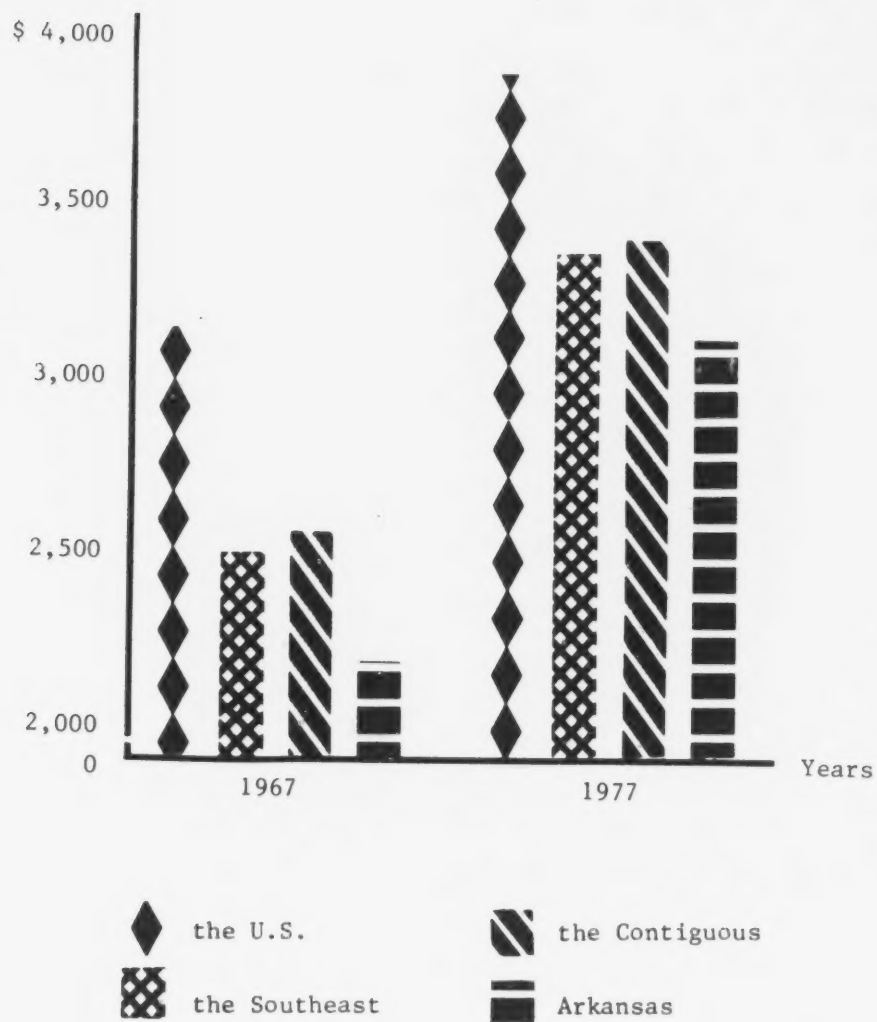


FIGURE 2(b)

THE 1967-1977 PER CAPITA DISPOSABLE PERSONAL INCOME
OF ARKANSAS AND HER CONTIGUOUS STATES,
THE SOUTHEAST, AND THE U.S.

(Constant Dollars)

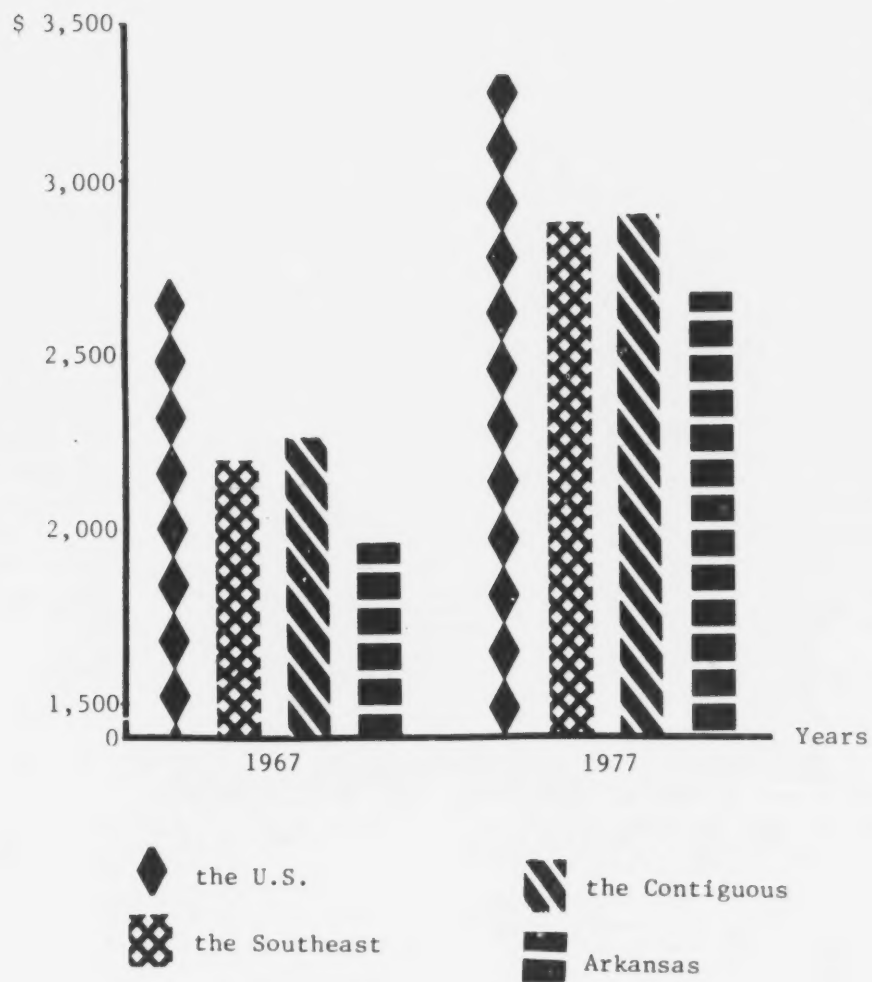


FIGURE 3(a)

ARKANSAS' PER CAPITA DISPOSABLE PERSONAL INCOME
RELATIVE TO THE U.S., THE SOUTHEAST,
AND THE CONTIGUOUS STATES,
1967 and 1977

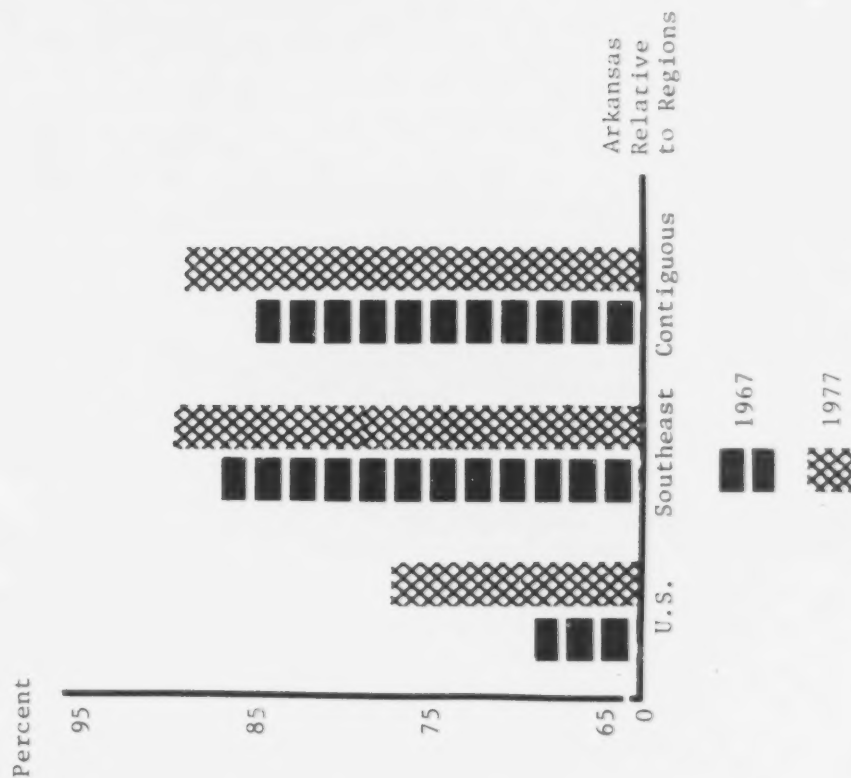


FIGURE 3(b)

ARKANSAS' PER CAPITA DISPOSABLE PERSONAL INCOME
RELATIVE TO THE U.S., THE SOUTHEAST,
AND THE CONTIGUOUS STATES,
1967 and 1977

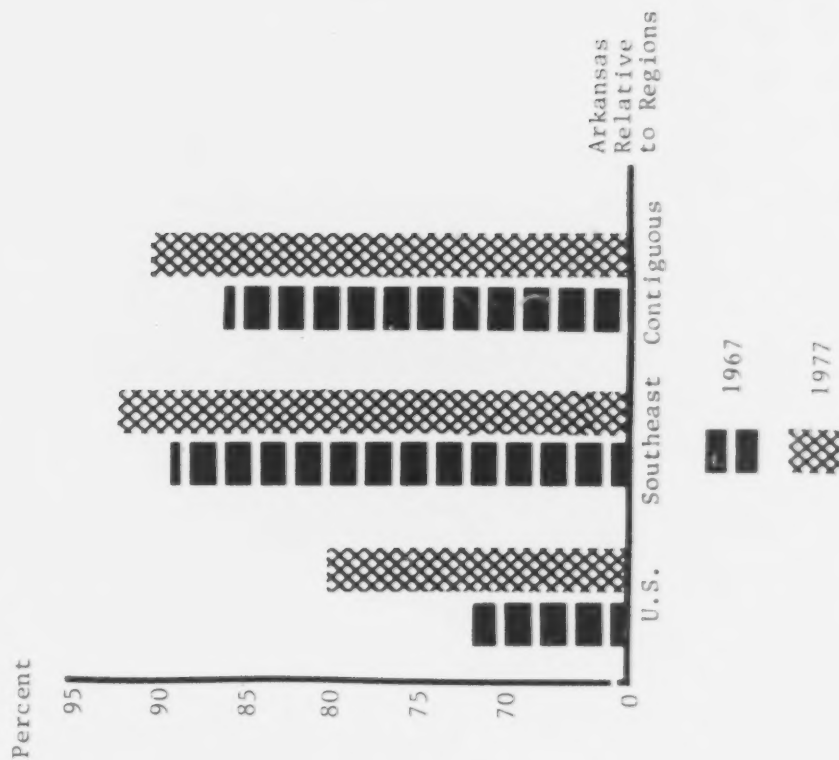
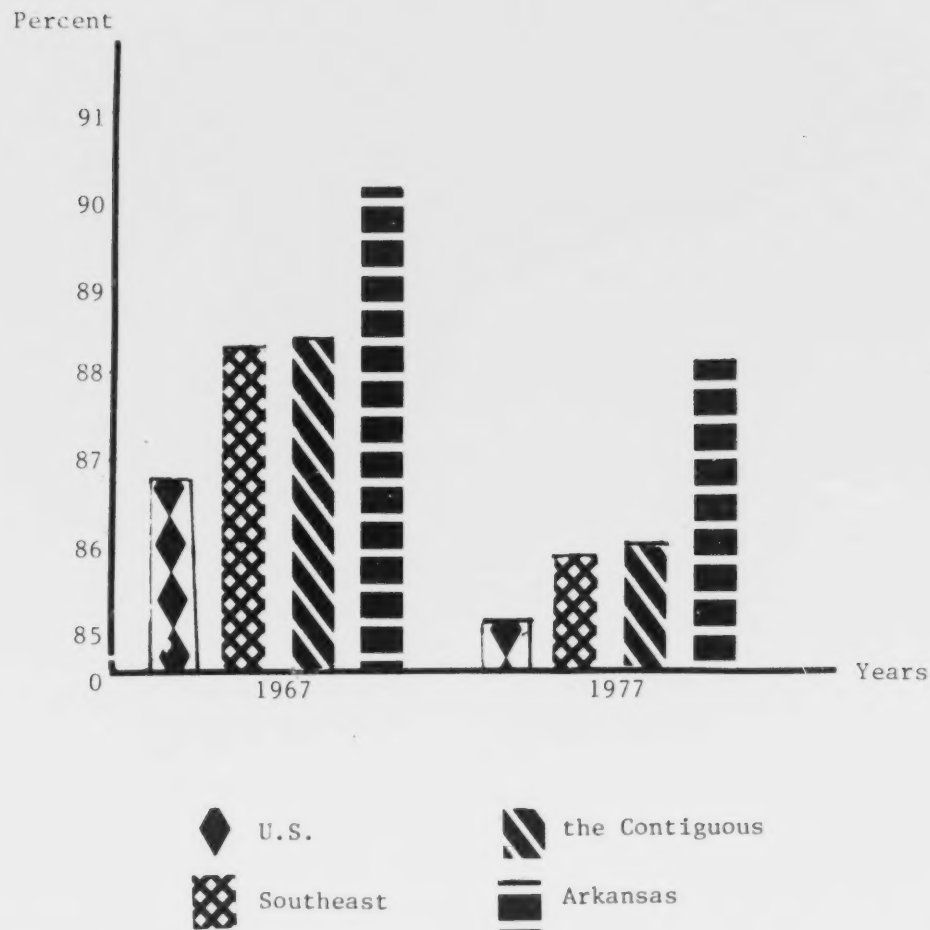


FIGURE 4

PER CAPITA DISPOSABLE PERSONAL INCOME RELATIVE TO
THE PER CAPITA PERSONAL INCOME OF ARKANSAS
COMPARED TO THAT OF THE U.S.,
OF THE SOUTHEAST, AND THAT OF
THE CONTIGUOUS STATES,
1967 and 1977



FOOTNOTES

¹Definitions employed here are those given in the January 1976 *Survey of Current Business*, United States Department of Commerce, Bureau of Economic Analysis, Washington, D.C., and are quoted as follows:

Personal income by Place of Residence is computed according to the following steps:

- (1) Add: Wage and Salary Disbursements, Other Labor Income and Proprietors' Income to compute Total Labor and Proprietors' Income by *Place of Work*.
- (2) Subtract: Personal Contributions for Social Insurance by *Place of Work* to compute Net Labor and Proprietors' Income by *Place of Work*.
- (3) Adjust: Net Labor and Personal Income by *Place of Work* according to a Residence Ad-

justment amount to derive Net Labor and Proprietors' Income by *Place of Residence*.

- (4) Add: Income from Rents, Dividends, Interest and Transfer Payments to compute Personal Income by *Place of Residence*.
- (5) Divide: Personal Income by *Place of Residence* by the population to compute per capita personal income.

Disposable Personal Income by *Place of Residence* is computed by subtracting personal taxes—such as federal and state income taxes, personal property taxes—from Personal Income by *Place of Residence*. Per capita Disposable Personal Income is obtained by dividing Disposable Personal Income by the population.

²In 1977, CPI = 181.5 (1967 = 100).

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A PRACTICAL FRAMEWORK FOR PERFORMANCE APPRAISAL

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Performance appraisal in organizations is a fact of life. Managers must continuously monitor past performance, present progress, and future prospects of their people. Sound management today makes formal employee performance evaluation programs essential. While there is plenty of information available on various aspects of performance appraisal systems, the way such systems are used may have more of an impact than the details of any particular appraisal device.¹ Few observers dispute that the quality and vigor of managers make the difference, at least in long-term success of any kind of enterprise. Yet, if we are to have competent managers, effective selection, appraisal, development and motivation must be used. All are links in a chain of management practice, and *appraisal* has historically been the *weakest link*.²

In a survey of executives in 19 companies, two interesting and consistent observations emerge: (1) traditional forms of performance appraisal are still in use even though many companies have adopted MBO or other development systems; and (2) although they still experience difficulty in carrying out the process, managers are unwilling to abandon performance appraisal.³ In this

article, a general framework of performance appraisal principles is discussed. Its purpose is to guide managers in their thoughts and actions, regardless of the particular appraisal situation in which they find themselves.

Principles are fundamental statements that serve as guides to thought or action. They are basic, but not absolute. They are not laws and do not suggest that identical results will occur in circumstances that *appear* to be similar. The following performance-appraisal concepts constitute *fundamental statements* and are, therefore, designated as principles. Fairly and intelligently applied, they can result in fair and effective performance appraisal.

The Principle of Relevancy

An individual's performance should be evaluated in terms of behavior which is relevant to the tasks and responsibilities in the organization—what the individual does and how well he or she does it—and not on irrelevant traits, characteristics, or behavior.

The first step in the performance appraisal process is to determine what behavior of the evaluated person should be evaluated. The appraiser must decide what performance and behavior is *relevant*. Employee appraisal should be based not on personality traits but on job performance, on attainment of objectives, and on achievement of results toward planned goals. Managers should not try to measure personality. There are thousands of different terms to describe an individual's personality, and it is very difficult to define, explain or measure such terms.

The Principle of Relevancy leads evaluators to guard against inappropriate evaluation of personal traits, characteristics, or behavior. However, performance cannot be evaluated *strictly* in terms of *results*. Discussion regarding several other principles will bear this out. What is important is that evaluators consider behavior which is *relevant* to the evaluated person's *tasks* and *responsibilities*: behavior which relates to *what* the person does and *how well* he or she does it. This is the concept of *relevant performance*.

The Principle of Objectivity

The evaluator must evaluate in terms of the requirements of the organization and its established standards and criteria, and not in terms of personal biases, prejudices or other subjective or extraneous considerations.

Objectivity in performance appraisal refers to evaluation which is unbiased, fair, impartial, dispassionate, and without prejudice. It need not be restricted solely to those measures which can be measured or identified by quantitative means. Objectivity is the characteristic of an individual which leads him or her to interpret, evaluate, and respond on the basis of what is actually discovered rather than as a result of feelings, emotions and the like.⁴

Performance appraisal involves people evaluating other people; it naturally involves human judgment and subjectivity. But that is not necessarily bad. Judgment is necessary, and ability to judge objectively is usually one of the criteria on which a managerial appraisal is based. Regardless of the person being evaluated or the nature of the job the evaluated person is performing, evaluators are expected to exercise good judgment. They are not expected to exercise biased judgment.

In light of the obvious need for objectivity, Douglas McGregor grew uneasy as he viewed standard performance appraisal practices. He noted that

The conventional approach, unless handled with consummate skill and delicacy, constitutes something dangerously close to a violation of the integrity of the personality. Managers are uncomfortable when they are put in the position of 'playing God.'⁵

McGregor realized that managers cannot escape making judgments about subordinates. "Without such evaluation," he also said, "salary and promotion policies cannot be administered sensibly."⁶

Objective "results" and "job targets" are desirable, but in evaluating managerial performance in particular, opinion can never be entirely eliminated, nor is it desirable that it should be. The important point is that opinion needs *substantiating by fact*.⁷

In being objective, evaluators must realize the human tendency toward subjectivity. They must make a conscious effort to filter out biases and to evaluate individuals on the basis of job and organizational requirements.

The Principle of Proficiency

The evaluator must understand the philosophy and purposes of the appraisal program being followed, and must be competent in the specific appraisal method, adept in performance appraisal in general, and knowledgeable of the job requirements of the person being evaluated.

Despite the suitability, exactness, correctness, and perfection of any particular appraisal method, and regardless of its reliability and validity, successful appraisal depends on the people who will implement it. There is always a danger that managers will adopt techniques of appraising performance even when they don't understand the philosophical basis for the techniques. Thus, evaluator skill and adeptness is a major requirement for effective appraisal. Managers should spend at least as much time thinking, studying and working at performance appraisal as they do on production, research or engineering problems. The payoff in doing so is just as great. To do the job well, each manager must prepare appraisal "tools" and acquire certain skills. This is one job which no management consultant, training specialist, personnel department, or administrative assistant can do for the evaluator. All may advise, some may take care of details, but the evaluator's task is his or hers alone.

A survey reports that the appraisal programs of many firms were not understood as well as might be desired and that appraisals were often conducted by supervisors not completely familiar with the jobs of their subordinates or the functions of their departments.⁸ Yet, unless an evaluator knows what is involved in the job requirements of the person being evaluated, a valid and fair appraisal cannot be made. Apparently, some evaluators do not realize this or do not concern themselves about it. "The most important cog in the evaluation machinery is the evaluator as an individual. Unless the evaluator does the job right, the whole performance-appraisal program will go down the drain."⁹

Principle of Comprehensiveness

In determining what performance to include in an appraisal, the evaluator should take a comprehensive view of the total job and the entire time period and not focus on isolated, nontypical, and insignificant incidents and actions.

There is a danger of looking at employee performance in limited terms regardless how objective those terms may be. To see the potential impact of limited evaluation on employee motivation, consider the problem of classroom grading. If a teacher overemphasizes final exam grades, students may spend the entire term trying to figure out the instructor's special interests and the questions likely to be asked. The students will reason that while "some objective measure of performance (the exam)" is useful feedback, providing a summary of accomplishment, overemphasis on one single measure produces deleterious effects on both classroom and out-of-the-classroom behavior. Managers must be careful not to use as a primary control or measure of performance the most convenient statistic or objective measurement in the situation. This type of measure often neglects the *total system* in which an employee's job is performed. It fails to motivate the employee to do the total job. The manager must seek and use a number of performance measures to give adequate recognition to all duties and responsibilities associated with a given employee.

One of the pitfalls which violates the Principle of Comprehensiveness is looking primarily at *recent performance*. When a supervisor makes a periodic evaluation, he or she will likely be influenced more by the way an employee has behaved during the past few weeks or months than during the entire preceding year or so. The result will be good only if recent performance is typical of the employee's consistent performance during the entire rating period.

Another error is the evaluation of *dominant behavior*. This is the rater's tendency to be overly influenced by a particular behavior of the evaluated person. Often an employee makes a strong favorable or unfavorable impression on the supervisor. When this happens, the supervisor is likely to be unduly influenced by that particular characteristic. For example, let's say there is an employee who is very cooperative and helpful to others, but who deserves only an "average" rating on such factors as "job knowledge" and "work under pressure." The supervisor may give the employee a good rating on cooperation with others. At the same time the supervisor may also give the employee *too high* a rating in other areas due to the subconscious influence of the employee's cooperativeness. This kind of error can work in both directions. If the employee is uncooperative, the supervisor

may be influenced to rate the employee too low in other areas.¹⁰

There are positive actions that evaluators can take to perform comprehensive evaluations. For example, *increased frequency of observations* would aid in providing greater comprehensiveness. Evaluators should also *review* the evaluated person's *performance comprehensively* in terms of the *total job* and the *entire period* covered by the appraisal.

The Principle of Control

In evaluating an individual's performance, the evaluator should consider the extent to which the individual has control and influence over performance and results.

In other words, the appraiser should ask and answer the question: What amount of *job* and *organizational success or failure* was within the evaluated person's spheres of *control and influence*?

There are weaknesses and problems in assessing performance strictly in terms of goal and result attainment. Especially when managerial analysis is involved, there are uncontrollable factors that should be taken into account.

It is entirely possible for a person to meet or miss goals through no fault of his own. Luck often does play a part in performance. It is possible, for example, that a new product will take off in the market far beyond expectations because of completely external factors and make the sales or marketing manager look exceptionally good, when the quality of the marketing program and its implementation might actually be poor. Or an unpredictable cancellation of a major defense contract might make the record of a division manager look deficient . . . Most evaluators will say that they always take uncontrollable or unexpected factors into account in assessing goal performance, and to a very great extent they do. But it is extremely difficult.¹¹

It has often been demonstrated that so called "hard" data—sales performance, production output, absences, etc.—can be and often are unreliable. They are also quite often a function of an external situation. For example, accomplishments of a salesman can be due to many factors other than his ability and effort—the failure of a competitor, the effect of a highly imaginative advertising program, the expansion of a client's requirements, or, conversely, the shift of a large customer to another location." And he predicts that "the emphasis in evaluating performance may not be so much on what the employee accomplishes, but on what is within his control."¹²

It is not easy for an evaluator to accurately and precisely determine the exact amount of job and organizational success or failure within the evaluated person's spheres of control and influences. Nevertheless, a conscientious and concerted effort to do so must be carried out.

The Principle of Constructiveness

Performance appraisal should be made in such a way as to promote improvement and development for both the person whose performance is being evaluated and the organization itself.

Appraisal involves examining, reviewing, and evaluating performance in terms of the requirements of the organization. It should be aimed at accurately determining the quality and level of performance—whether that performance be good, poor, or mediocre. It should *not* be merely an exercise in criticism or faultfinding.

If appraisal is to be effective, it should help identify performance elements which contribute to the organization's success or failure. From the individual's viewpoint, appraisal should help identify those elements of performance which contribute to success and those which do not. It is very useful to help the individual personally develop, and it is also in the best interests of the organization to emphasize and continue good work behaviors.

The Principle of Communication

The person whose performance is being evaluated needs to know beforehand the details of the appraisal—who, what, when, how, why; and after the appraisal, the results; and the evaluator must get feedback to assure the evaluated person's understanding—before and after.

Individuals need to know what is expected of them and how well they are doing; however, this information is not always communicated, even though managers often believe it is.

The desire of evaluatees for performance feedback and for potentially positive outcomes outweighs any fear of potentially negative feedback and outcomes. The desire for information regarding how one's superior perceives one's job performance may be sufficient reason for many people to welcome being evaluated.¹³

If there is valid, authentic communication with the person being evaluated regarding what is expected of him or her and just how his or her performance is examined,

reviewed, and evaluated, this then should contribute measurably to effective performance appraisal. The role of communication in performance appraisal is complex and often puzzling. In a recent article on the relationship between performance appraisal and communication, the author identified several appropriate strategies for implementing this principle.¹⁴

The Principle of Attitude

In making a performance appraisal, the evaluator should approach the task with a sincere and conscientious attitude, should be motivated to evaluate as honestly and objectively as possible, and should put forth the same quality of effort as would be expected of his or her appraiser.

This principle is closely related to the Principle of Constructiveness. Both call for a *positive approach*. It is also closely related to the Principle of Proficiency, since both deal *directly* with the *evaluator*. The Principle of Attitude should relate to all the other principles and *should be the most pervasive*, that is, as the evaluator goes about remembering and applying the other performance appraisal principles, this one should be the focal point.

Supervisors must be favorably disposed toward the process and see it as an important part of their responsibility. They must be given time to evaluate subordinates, and must be convinced that evaluation is a job to be done meticulously. Supervisors must adopt an attitude that will require a good deal of thought, time and energy. They must look upon this task as one of the primary means of achieving a unit's goals; and as a logical outcome of this attitude, supervisors should be willing to be judged on the way they evaluate their subordinates.¹⁵

Conclusion

Acknowledging performance appraisal in organizations as a fact of life and accepting effective performance appraisal as more contingent upon the people who use it than upon the system itself, it is possible to identify a *set of principles conducive to the effective use of any appraisal system*; sufficiently *pervasive* and *comprehensive* so as to be *meaningful* and appropriate to all types of organizations in general; and sufficiently *specific, clear, and functional* at all levels of *supervision and management*.

The eight principles of Relevancy, Objectivity, Proficiency, Comprehensiveness, Control, Constructiveness, Communication, and Attitude are identified and developed in this review of performance appraisal. They form the

basis for a serious examination of existing performance appraisal systems.

Applying principles does *not* constitute a panacea, nor are they intended or designed to be such. However,

it is hoped that these principles regardless of the job and level of management involved, will give an evaluator or anyone concerned in any way with performance appraisal, a useful framework and orientation to lead, in a practical way, to effective and fair performance appraisal.

FOOTNOTES

¹Wendell French, *The Personnel Management Process*, 3d ed. (Boston: Houghton Mifflin, 1974), p. 361.

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³Alan L. Patz, "Performance Appraisal: Useful But Still Resisted," *Harvard Business Review*, May-June 1975, p. 74.

⁴Aaron O. Sartain, Alvin J. North, Jack R. Strange, and Harold M. Chapman, *Psychology: Understanding Human Behavior* (New York: McGraw-Hill, 1958), p. 424.

⁵Douglas McGregor, "An Uneasy Look at Performance Appraisal," *Harvard Business Review*, May-June 1957; see also Max D. Richards and William A. Nielander, ed., *Readings in Management*, 2d ed. (Cincinnati: South-Western Publishing Company, 1963), p. 837.

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⁸Richard E. Clingenpeel, "How Employees Feel About Performance Appraisal," *Personnel*, May-June 1962, p. 76.

⁹Felix M. Lopez, *Evaluating Employee Performance*. (Chicago: Public Personnel Association, 1968), p. 183.

¹⁰Robert H. Finn, "Accurate Employee Appraisals by Supervisors," *Journal of the American Society of Training Directors*, rpt. (Connecticut: Notes and Quotes), p. 4.

¹¹Koontz and O'Donnell, *op. cit.*, p. 462.

¹²Lopez, *op. cit.*, p. 234.

¹³Thomas H. Stone, "An Examination of Six Prevalent Assumptions Concerning Performance Appraisal," *Public Personnel Management*, Nov.-Dec. 1973, p. 414.

¹⁴B.L. Hawkins and Paul Preston, "Performance Appraisal: Evaluation and Communication," *Arkansas Business & Economic Review*, Winter 1978, Vol. 11, No. 4, pp. 19-24.

¹⁵Lopez, *op. cit.*, p. 184.

THE GREAT GASPUMP LINE-UP: CONSUMER PSYCHOLOGY AND THE VINDICATION OF QUEUING THEORY

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In recent years "the great gaspump line-up" has become an all too common scenario in many parts of the United States. By now the events of this scenario are virtually standard fare. First, gasoline supplies start getting a little tight. Second, major suppliers respond to this tightness by cutting back slightly on deliveries to their dealers. Third, with reduced supplies, a few dealers actually run out of gas toward the end of their delivery period or start to cut back on operating hours. Fourth, almost without warning "the great gaspump line-up" occurs with motorists lining up for blocks, scrambling, scuffling, and even shooting to get the precious fluid. Fifth, almost as suddenly as the lines have formed, they dissipate as consumers become tired of the process and realize that there is no serious shortage. The final event in the scenario is to blame the oil companies for the "great gaspump line-up" by accusing them of creating a false shortage for the purpose of escalating prices.

Are the long lines at service stations a result of a real or a created gasoline shortage or are they the natural outcome of a "panicky" consumer psychology—the "topping-off

syndrome?" How can a minor shortfall in gasoline supplies (e.g. 5 or 10 percent) create four hour waiting lines at the pumps? There are statistical answers, or at least partial answers, to those questions. The answers come from a branch of operation research known as "queuing theory" or "waiting line models."

ENTER QUEUING THEORY

Queuing theory is a branch of mathematics that concerns itself with the movement of objects or persons through some type of service facility. As with most of the fields in operations research the serious study of service queues began during and shortly after World War II. Consequently, by now, an extensive body of theory has been developed with in-depth analysis having been applied to almost every conceivable type of servicing arrangement.

In actuality, the problem of cars waiting for gasoline is one of the more simple types of service facilities and represents one of the first applications of the queuing

theory. Using only the rate of arrival and the rate of service as inputs, equations have been developed that can compute the expected length of the waiting line, the expected waiting time for an individual unit, the probability of no wait, and certain other statistics.

THE NATURE OF WAITING TIMES

The important thing to note about this body of theory is that the graph of waiting times (see Figure 1) shows a rather peculiar distribution. The shape of this distribution is more exaggerated than a simple exponential expansion, almost taking the appearance of a 90 degree, left-hand turn. In other words, moderate increases in the arrival rate have virtually no effect upon the service times; hence, the normal fluctuations in gasoline consumption such as weekday vs. weekend, summer vs. winter, work-day vs. holiday, do not produce long lines. However, as the arrival times begin to approach the service times, the waiting time increases at an alarming rate. The end result of this process is shown in Figure 1: when the arrival time is equal to or exceeds the service time, then the length of the line goes to infinity—the waiting line will never be serviced.

To be explicit, the long lines at the gasoline station may not be caused by a shortage of gasoline, but rather may result from an increase in the rate of arrival of the customers. The explanation for this increase is evident upon inspection: consumers acting in the interest of their own protection by "topping-off," that is, by filling up more often. When supplies are tight, consumers strive to avoid getting caught with their tanks empty and stations closed. Possibly the consumers' only and certainly their best defense against being caught without gas is to keep their tanks as full as possible at all times. However, as they come in more often, the arrival rate is greatly increased. Even though they are technically the 'same' customers buying the same total amount of gas, they are arriving at the station more frequently.

For example, suppose that motorists who, previously, have been filling their tanks when the needle was almost on empty begin to fill up when they are down to half a tank. The result is a virtual doubling of the number of customers with little or no increase in consumption. Furthermore, if these same customers now decide to start refilling at the 3/4 mark, there will be another doubling in the number of customers. Hence, if the fearful customers switch from refilling at empty to refilling every time they have used but 3/4-tank, then the filling station will find itself besieged by four times as many customers as it previously served: a condition which is sure to swamp even the best managed station.

To better illustrate the tremendous impact that an increase in arrival times has upon the time which a unit

must spend waiting in the input queue, consider the following hypothetical example.¹ Assuming that customers arrive exponentially at a rate of one every 18 minutes or 3.33 units per hour at a single facility which can service a unit in 5 minutes or at a service rate of 12 units per hour then, the expected waiting time is approximately one minute.² Assume that the arrival rate, above, represents motorists who are filling up when their tanks are virtually empty. Now, if those same motorists decide to fill up when their tanks are only half empty, the arrival rate will double, that is, one customer every 9 minutes. Of course, it does take less time to pump 8 gallons as opposed to 16 (assuming a 16 gallon tank); however, pumping time is only a part of the total process of pulling into position, clearing the pump, removing the gas cap, paying for the gas and so forth. But overall, the service rate is not decreased to any significant degree by more frequent refills. With the new arrival rate resulting from 1/2-tank reseriving, the formula now computes an expected waiting time of around 3 minutes.

But the process is just beginning! As the arrival rates begin to approach the service time of 5 minutes, the waiting times increase dramatically. The calculations shown in Table 1 and illustrated in Figure 1 reflect how dramatic these increases really are. As can be seen in Table 1 the waiting time goes to infinity before the motorists reach the point where they fill up when their tanks are only 1/4 empty. The California experience with all-day lines provides a good example of this process and a vindication of queuing theory.

FEAR OF SHORTAGE CAN HELP TO CREATE ACTUAL SHORTAGE

The foregoing discussion has tried to show that the mere fear of gasoline shortfalls may create the appearance of massive shortages. By refilling their tanks more often, motorists effectively increase the number of customers thereby increasing the arrival rate. As documented by queuing theory, the increase in the arrival rate has the odd property of first having little effect, only to later have a dramatic effect. Thus, to switch from refilling at empty to refilling at half a tank, a change of 50 percent, only increases the waiting time from 1 minute to 3 minutes. Yet, by increasing the frequency of fill up by refilling whenever the tank level falls to 72 percent full instead of at the 66 percent level, the waiting time increases from 6 minutes to 6 hours. This example helps explain how service stations may operate normally one day and the very next day have to cope with lines 10 blocks long.

Since an increase in arrival rate is caused by more frequent fill up of old customers as opposed to some dramatic increase in new customers, gasoline consumption should remain about the same: the same customers buying

Figure 1
The Relationship Between Waiting Time and
Arrival Rate

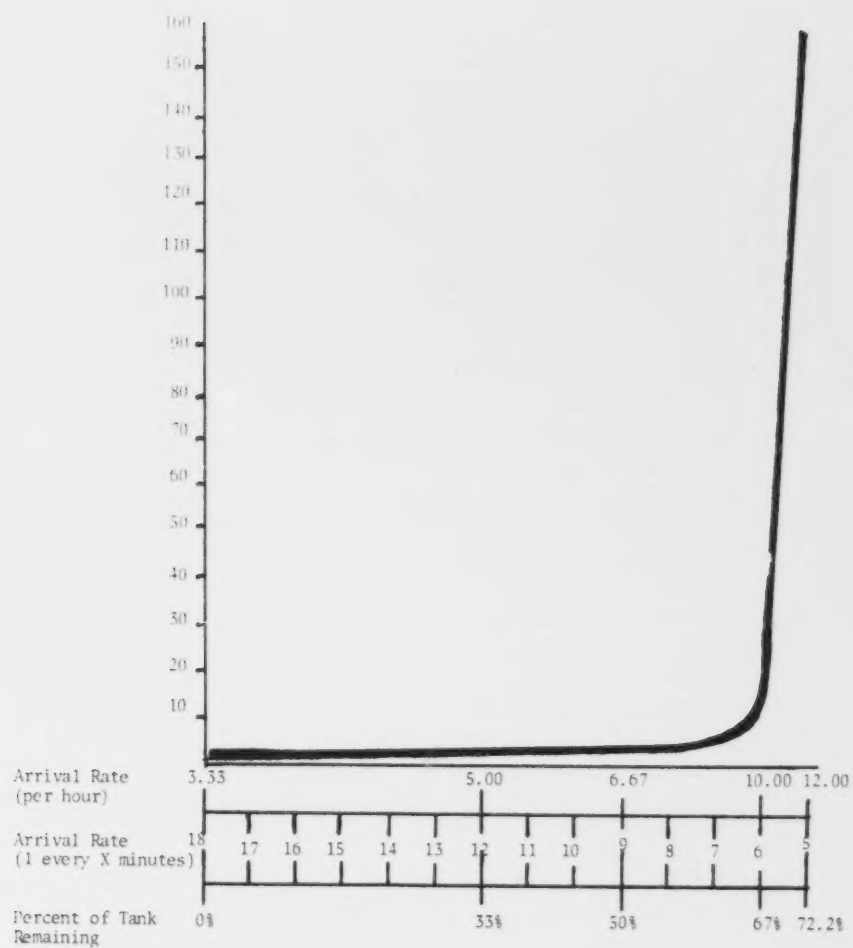


TABLE 1
A HYPOTHETICAL EXAMPLE OF EXPECTED WAITING TIMES

Arrival Rate (one every how many minutes)	Arrival Rate (per hour)	Percentage of Tank Remaining	Expected Waiting Time in Minutes
18	3.33/hour	0%(on empty)	.96 minutes or $\cong$ 1 min.
12	5.00/hour	33%(1/3 tank)	1.785 minutes or $\cong$ 2 min.
9	6.67/hour	50%(1/2 tank)	3.128 minutes or $\cong$ 3 min.
6	10.00/hour	66%	12.49 minutes or $\cong$ 12 min.
5:50	10.28/hour	67%	14.94 minutes or $\cong$ 15 min.
5:40	10.58/hour	68%	18.63 minutes or $\cong$ 19 min.
5:30	10.90/hour	69%	24.77 minutes or $\cong$ 25 min.
5:20	11.26/hour	70%	37.87 minutes or $\cong$ 38 min.
5:10	11.61/hour	71%	74.83 minutes or $\cong$ 75 min.
5:05	11.80/hour	71.7%	149.78 minutes or $\cong$ 2½ hours
5:04	11.84/hour	71.8%	187.33 minutes or $\cong$ 3 hours
5:03	11.89/hour	71.9%	249.60 minutes or $\cong$ 4 hours
5:02	11.92/hour	72.0%	372.48 minutes or $\cong$ 6 hours
5:01	11.96/hour	72.1%	747.49 minutes or $\cong$ 12½ hours
5:00:5	11.98/hour	72.17%	1497.48 minutes or $\cong$ 25 hours
5:00	12.00/hour	72.222%	infinity

in smaller quantities at more frequent intervals. Unfortunately, the perception of a shortage may also lead to certain types of activities which tend to exacerbate whatever real shortage there may actually be.

First, the motorists are forced to spend a long time waiting in line. Both the time spent waiting and the gasoline spent idling represent a diversion of resources into non-productive areas. Gasoline that could have been used in moving from place-to-place is now wasted while idling in a slow-moving line.

Second, as everyone strives to fill up at the same time the normal timing of the market is destroyed. The refineries and dealers are structured to handle a relatively constant demand schedule. When everyone comes in for a fill up simultaneously, those capacities are over-taxed.

Third, as implied above and connected with reason number two, there is the problem of explicit hoarding. Everytime there is a "gasoline shortage," there also appears a simultaneous "gasoline can shortage." Consumers, again acting in their own best interest, rush out to buy gasoline cans and to hoard gas for the future. Although this effect may seem minimal, it can nevertheless be quite severe in that it comes at such a bad time. It is like getting the hiccups while laboring with emphysema. At the time

when the gasoline delivery system is struggling desperately to keep up with present demand, customers are coming in and demanding both present and future supplies.

LET THE MARKETING MECHANISM WORK

Most of the talk concerned with the gasoline shortage has centered around allocation and rationing schemes which would limit the amount which a customer could buy. Such rationing schemes are (a) generally ineffective in limiting demand; (b) quickly produce black markets and other 'illegal' ploys for avoiding regulation thereby not only reducing the effectiveness of the rationing attempt but also helping to foster a general disrespect for the government and its laws; and (c) result in the channeling of productive resources into a non-productive bureaucracy.

The best solution is to let the market set both supply and demand through the pricing mechanism. And, if the government feels that it must do something to end the panic, let it insist that reserivcing with gasoline be limited to those vehicles whose fuel gauges before purchase show no more than 1/2-tank of fuel remaining; it should not encourage additional service station visits to "top-off" by trying to limit purchase quantities to relatively small amounts.

FOOTNOTES

¹While admittedly hypothetical, the above example is probably quite conservative in that it allows a rather substantial rate of increase before that increase begins to strain against capacity. Due to the pressure of competition which demands efficiency, our service stations probably do not have as much slack in them (under normal conditions) as this example would imply.

²Using the formula: $E(Tw) = \frac{a}{2s(s-a)}$; the use of exponential arrival rates and constant service times is based upon actual studies of gasoline service stations as reported in the operations research literature.

BUDGET PLANNING APPROACHES

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Business-folk wisdom has it that nothing happens without a written authorization and a budget appropriation. Regardless of its literal truth, that saying places the budget in proper perspective as an action-oriented financial document. Besides being concerned with dollar amounts, good budgeting procedure should answer the question, "Where and how can we most effectively spend money?"

Only through the performance of objective-oriented tasks, coordinated through a program concept, are an organization's goals and objectives reached. Therefore, programs and tasks should be funded, and not the objects they consume in the course of their progress. Since any firm's resources of funds and personnel are limited, it is important that they be allocated rationally. Then, effectiveness and efficiency in their use will be maximized. To determine the wisdom of budget decisions, information must be available that indicates task-related progress toward objectives.

This paper will review several budgeting approaches before suggesting a procedure. Only indirectly will the size of the budget be considered. First, frequently used terms will be defined.

Definitions

1. Budget — a plan that coordinates in a program format the allocations of funds and resources necessary to the achievement of specific objectives in a future time period.

2. Goals — the verbalized (written) description of a desired state of affairs, usually incorporating a long time

frame, based upon current knowledge and values. Statements of corporate mission are goal-oriented statements.

3. Policy — A statement which guides executive action and aids decision-making by directing organization activities toward defined goals.

4. Objectives — The numerical expression "... in terms of units of desired impact upon ... the environment ..." to be achieved within a given, relatively short time period by deploying available effort.¹ Return on investment, market share and sales volume are common categories of marketing objectives.

5. Program — "... Group of activities ... that are oriented toward a strategic objective."² New product development, market penetration and sales stimulation are examples of types of programs, the general objectives of each being indicated by the program name. Activities from several organizational units or departments may be combined into a program. As an example, the market penetration program may require coordinated activities by the sales, advertising and sales promotion departments, all focused upon a particular market segment or channel. Each activity may be measured in terms of a desired standard or level of performance, norm or quota, or the planned intensity which will achieve necessary impact levels to contribute to the program's objectives.

This raises the fundamental problem of estimating the sales response to different levels and combinations of effort, usually measured in dollars. Some procedures exist which aid this important process. For example, marketing planning may employ computer simulation techniques, statistical analysis, experimentation and Delphi techniques;

however, analytical comments about, and descriptions of, methodology are beyond the scope of this article. Elegant though each may be, budget decision in the end must wait upon the judgment of an experienced executive.

Budget Characteristics and Relationships

The budget should coherently relate to the planned performance of work policy objectives of the firm, the costs of achieving those aims, and management's time schedule. In enumerating current programs that lead to the achievement of planned goals, the budget should link past, present and future plans in a continuum. A series of budgets should disclose what provisions have been made to help increase the ability of the firm to achieve goals.

Specific objectives of performance should be funded. Then, funds should flow from each objective to the functional department which has a task to perform, in proportion to the department's ability to contribute to the objective. Finally, at the lowest tactical level, performance would be funded to pay for the required number of times the task must be repeated according to the plan. These quantitative statements should appear in the budget form so that their foundation as the basis for the budgetary allocation is clear. The interrelationship of the diverse tasks will be expressed through the program concept thus funded. Beyond that, budgets should be modified as achievements are reviewed and compared against performance objectives.

Budgets constructed in such a manner would facilitate the analysis of the efficiency and effectiveness of programmed tasks. The stated quantitative objectives of task performance can be employed as the criteria against which actual performance can be measured. The firm's accounting systems and sales reports over a period of time can serve as the information source of standard performance levels. While past information is at best an approximate guide to the future, field experiments to determine environmental response to different levels of effort also yield only approximate responses.

By employing the principle of management by exception, instances of poor performance can be singled out by using the budget as an administrative document—a characteristic that would be enhanced by including quantitative objectives for each funded activity.

Traditional budget methods, however, restrict the use of the budget as an administrative tool as will be seen in the next section.

Traditional Budget Methods

1. Line-expense budgeting—A common and widely used approach to budget construction, the line-expense

budget fails to meet the criteria mentioned above. Allocations are made to various objects of expenditure, such as personnel or supplies, but not to the activities which consume them. Such budget construction, closely associated with accounting systems, is largely designed to provide close administrative control and to limit the exercise of discretion.³ While some situations may require tight control, the success of a program may depend upon a major adaptive effort at a decentralized level. This type of effort is most likely to be stymied because of line-expense budgeting. Not being program related, the allocations are most likely not to be in proportion to the effort needed to develop business opportunity.

A further administrative disadvantage of this budget approach lies in the dysfunctional result that is likely to accompany the profit-motivated executive. Confronted with a list of expenses, as in Exhibit 1, the executive is likely to seek profit opportunity by reducing the itemized expenses. However, many expenses cannot be cut without reducing the company's effectiveness in securing market-related goals. For instance, marketing objectives are achieved to the extent that planned levels of effort are expended, all other things remaining the same.⁴ Reducing marketing line-expense items, without regard to the adverse effect upon the marketing program of such an action, is not likely to satisfy the overall profit needs of the cost cutter. But recall that the line-expense budget contains no program-related information that could aid in more sophisticated, less primitive approach.

The decision itself—to cut itemized line expenses—may have had excellent premises, when one considers how a line-expense budget is conceived. Typically, the lowest level manager compiles "... estimates of district sales and expenses for the coming period ... expenses of operating district offices ..."⁵ Programs and activities are not necessarily reviewed and evaluated, nor are alternatives considered. Rather, existing programs and activities are continued, although their usefulness to the firm, in its changed environment, may be limited. They are not related through the budget to the achievement of specific objectives. Program cost components are not segregated. Existing activities and tasks are funded incrementally with little regard to their qualitative contributions to the firm's long-range goals. For instance, not considered is the possibility of rearranging program activities and tasks to fit better with the changing market environment. The market response rate is not consciously applied as an underlying premise in the line-expense budget approach. Typical of the product-oriented business philosophy, allocations tend to be arbitrary and there is little analysis of the effectiveness of any appropriation because it is difficult to provide information related to achievement.

2. Functional budgeting—A slightly more useful approach, because it permits some analysis, is functional

EXHIBIT I

EXAMPLE OF LINE-EXPENSE BUDGET OF DISTRIBUTION EXPENSES

For the Year Ending 12/31/xx

	<u>Total</u>
Sales Managers' Salaries	\$ 56,000
Salesmen's Salaries	250,000
Sales Clerical Expense	24,000
Rent of Sales Offices	30,000
Traveling Expenses	70,000
Commissions and Bonuses	150,000
Delivery Expenses	170,000
Advertising	400,000
Total	\$ 1,150,000

EXHIBIT II

ILLUSTRATION OF FUNCTIONAL BUDGETING: BUDGETED STANDARD VS. ACTUAL

<u>Functional Operation</u>	<u>Budget Amount</u>	<u>Standard Unit Costs</u>	<u>Total Budget</u>
Salesmen's Prospecting	12,000 calls	\$ 4.20	\$ 50,400

Actual Cost

<u>Functional Operation</u>	<u>Actual Amount</u>	<u>Actual Unit Cost</u>	<u>Total Actual Cost</u>
Salesmen's Prospecting	12,100 calls	\$ 4.10	\$ 49,610

Comparison

<u>Functional Operation</u>	<u>Total Budget Cost</u>	<u>Total Actual Cost</u>	<u>Difference</u>
Salesmen's Prospecting	\$ 50,400	\$ 49,610	\$ 790

budgeting. Briefly put, standard costs are developed for each functional activity; actual costs incurred are compared against the standards, and necessary bookkeeping adjustments then are made to the individual expense accounts. Functional budgeting focuses internally on the cost of performing tasks, but is not concerned with goal achievements or results.

Contemporary Planning and Budgeting

More contemporary approaches to budgeting are Planning-Programming-Budgeting (PPB) and Zero-based Budgeting (ZBB). The analytical review process, in which the performance of programs and tasks is compared against budgeted objectives, is common to both. The differences between them lie in their perspectives. PPB is based on programs conceived by top management planners; ZBB funds tasks conceived by lower level management and selected by top management. Consequently, the utility of each differs as an instrument of policy. However, both answer to the important concerns of efficiency and effectiveness, and provide for the analytic function. PPB will be considered first.

1. The PPB approach – A top-down approach, program budgeting assembles all functions and activities necessary to the accomplishment of specific objectives. In a systematic manner, after a review of the business environment, top management decides on immediate objectives and the best short-run strategy that can contribute to the firm's long-run goals.⁶ An overall budget total must be estimated. While an objective-task approach is recommended and is feasible for this purpose, the ease and pragmatism of the "all you can afford" approach is appealing.⁷ A budget guideline may be found someplace between the two points thus identified. Then, alternative programs (combinations of activities) should be created with objectives stated for each, and including cost and timing factors.

In choosing between programs, the management planning group must estimate the costs and market response for each. Information sources are the firm's accounting records and the past experience of the executives. Such criteria as profit contribution, sales response and imputed market values aid in the choices between activities and the allocations of effort to each. The rational application of criteria to the budget decision is the main feature of PPB.

Following the final decision, appropriations are made to the operating divisions where the activities will be performed, and the activity objectives are communicated. The activity managers then must plan and execute related tasks within the guidelines of the functional budget.

As can be discerned, PPB is an aid to compromise decision-making in that it is concerned with the payoffs from alternative courses of action. Of course, continuous monitoring is necessary, to compare the program's results against its objectives. Where a significant deviation is observed between actual achievement and the time-factored objective stated in the plan, the cause must be found through investigation, and then be removed or neutralized, or the program must be modified. The reporting system must produce quantitative data, but facts are no substitute for qualitative judgment in decision-making.

Among the advantages of PPB are its systematic approach, its emphasis on goals and related strategy, its use as a possible aid to reorganization, and its focus on shortcomings. Most important among them is the centralization of the planning process in the headquarters group. Resulting plans tend to center on what should be accomplished, but not on the feasibility of execution. Operational constraints are poorly perceived. As a result, operating managers do not receive adequate guidance, but are nevertheless responsible for implementing policy decisions.

Other criticisms leveled at PPB are that it does not provide a means to evaluate the impact of various levels of funding on each program activity, nor does it establish priorities among programs.⁸ These gaps, however, are overcome by ZBB. In that sense, ZBB and PPB are complementary.

2. The ZBB approach – As we saw above, a major weakness of PPB lies in its lack of operational details. In contrast, ZBB forces managers to review details of the various alternative programs and budgets. Thus, a solid foundation of information about all functions and operations supports crucial decisions.⁹ Where PPB centralizes planning authority and effort in a central planning group, ZBB is a bottom-up approach to budget planning. It focuses on tasks that each operating line unit is to perform, but not on the strategy-related programming decision.

The operating manager attempts to justify each activity, and the budget request for each, by supplying information on costs, purposes alternative courses, performance standards or objectives, the possible results of non-performance of the activity, and the activity's benefits. These information components constitute a decision package. The basic decision package is made at the operating manager's level because more detailed knowledge of the function and the market environment is available there than at many higher levels. The operating manager is presumed therefore to be better equipped to identify and evaluate different levels of effort and the probable results from each.

Decision packages from each lower level of management are passed up the chain of command. Management's responsibility at each higher level is to decide on the priority ranking of all decision packages presented before passing the package of plans up to next higher level. When the various priority-ranked decision packages reach the top, management then compares the relative needs and priorities of the different organizations and departments to make its funding decisions.

The fundamental steps in ZBB are the development of the decision packages and then the ranking of each. In developing the decision package, each separate activity, existing and new, must be analyzed and described by the line manager, as mentioned above. In ranking each decision package in its order of importance, upper level managers employ cost/benefit criteria or some subjective evaluative criteria.¹⁰

The finalized budget, then, integrates many decentralized plans and activities. In reaching its final form, the various decision packages may be subject to strict comparisons against alternative packages, comparing the incremental costs and incremental benefits or revenues of each. In the ranking process, management has the opportunity to eliminate an activity or to choose from several levels of effort. Finally, management is given detailed information about the amount of money needed to accomplish certain ends.¹¹ In the process, problems can be identified as well as areas for potential development in profits and operations. However, the major benefit of ZBB seems to be in the involvement of lower level employees and managers. According to one participant in the budget process, "... (It) forces you to think through your priorities. ..." ¹² But, in criticism, the same party doubted that the resulting decision would have been different, using some other budget method.

Another criticism of ZBB contends that it is not applicable to situations involving policy changes of a broad, strategic nature. The ranking of priorities may be "... too simplistic ..." and more practical at the level of specific functional performance.¹³ Those criticisms imply that an organization probably should not rely on only one method of budget planning since the information inputs, planning responsibilities, and environmental perceptions differ at various levels of the organization.¹⁴

Informational requirements for the ZBB review process are similar to those for PPB. In both, the review function should be performed regularly and frequently, with the objective of making timely activity reforms. A suggested budget planning process that incorporates features of ZBB and PPB is discussed next.

Suggested Procedure for Budget Planning

The budget process should be a three-stage flow process-strategic planning (top-down), activity planning (bottom-up), and authorization (top-down), as presented in Exhibit III. In the strategic programming stage, top management, guided by long range goals and corporate strategy, decides on intermediate range objectives and expenditure guidelines, after an environmental review. Those guidelines are communicated to the various functional departments as the foundation for the planning of department programs and lower level activities.

Marketing management, for instance, with the assistance of the heads of each marketing activity unit, would then formulate a program to achieve its share of the corporate objective. Based upon estimates of the sales response to various effort levels of each activity element in the marketing mix, objectives and related levels of effort for each may be quantified. The procedure would be repeated at each lower level in the organization in order to gain the widest participation.

The process can be illustrated more fully. Assume one of marketing's objectives to be a specific increase in market share, to be accomplished by gaining new customers with the existing product line. Marketing management must translate the added market share percentage into numbers of new customers in order to establish a tangible objective for the department. That objective then becomes the focal point for the plans of each subordinate functional manager. The sales manager, through his knowledge of the previous market response to the activity, may relate the number of new customers needed to a total number of sales calls. The call capacity of the sales force can be compared with the call capacity needed to accomplish the objective. An estimate can then be made of the needed sales force budget, since direct-selling cost data is available from accounting records and sales department data.

Similarly, the advertising manager can relate the number of new triers needed to a total of advertising impressions that must be made. Again, budget estimates can be generated from previous data. Funding estimates may also be made for the other specializations that will constitute the marketing program. The statement of tasks, objectives and estimated funding requirements provide the foundation for the decision package which is then passed up from each special activity manager, to the marketing manager for evaluation and ranking.

At each lower level, estimates of the resource capacity needed to achieve specific objectives should be compared against available capacity. Differences must be communicated back up the organizational ladder.

EXHIBIT III
MODEL OF PPB/ZBB BUDGET FLOW PROCESS

Stage 1 – Strategic Programming: Downward Flow

<u>Locus</u>	<u>Process</u>	<u>Standard</u>
1. Top Management	a. Plan intermediate objectives and strategy. b. Establish budget guidelines.	Long-range corporate goals.
2. Department	a. Formulate programs b. Specify objectives for activity managers.	Sales response function to marketing mix elements.
3. Activity Unit	a. Plan activity details. b. Compare resource capacity available with resource capacity needed for different levels of achievement. c. Estimate levels of cost for several levels of achievement. d. Estimate activity quotas; plan deployment.	Sales response function to activities and standard ratios to specify quantitative objectives.

Stage 2 – Activity Planning: Upward Flow

4. Activity Unit	a. Formulate decision packages and rank them.	
5. Department	a. Evaluate, modify and select among decision packages b. Compile into one package/funding request, and pass upward with recommendations.	Cost/benefit
6. Top Management	a. Evaluate, modify and select among decision packages. b. Fund final decisions.	Cost/benefit; marginal analysis

Stage 3 – Authorization: Downward Flow

7. Top Management	Communicate budget/program decisions.	
8. Middle and Lower Management	a. Execute budgeted activities. b. Control performance c. Take corrective actions as needed.	Budget objectives. Accounting data; field reports; inspection

Those difference messages should include evaluative statements about the cost of acquiring needed resources, what can be accomplished at various levels of effort, and alternative activity mixes. Then, the upper level manager can select the preferred activity level for each subunit, depending upon pertinent concepts of strategy and tactics and estimates of the probabilities of success. In effect, the organization is restructured to carry out the plans.

At each higher level, administrators compile the decision packages received, evaluate and, perhaps, modify them, employing cost/benefit or judgmental criteria. A coordinated plan should emerge that represents the best balance between expenditure and achievement. Until that condition is met, funds should continue to be reallocated between territories and/or activities by each administrator.

Top management will receive a suggested plan which relates objectives to the performance of pertinent activities at a calculated level of effort, and the associated costs of carrying it out. Having received the thoughtful attention of the executives who will be responsible for the plan's success, it can be rallying point for the firm.

Now funds may be allocated to the program to set the organization in motion. The level of activities funded in the final plan become the standards of performance for activity control, employing procedures and information sources mentioned earlier.

Summary

In this paper, traditional and more recent approaches to the budgeting process have been reviewed. The procedures differ in the degree to which the budget document includes objective-related, program-coordinated task information. The traditional line-expense approach usually provides no such information; and, therefore, it does not facilitate the important functions of program control and coordination. Furthermore, while the techniques of functional budgeting, PPB and ZBB offer improved features over line-expense budgeting, each has shortcomings which limit program control and coordination. While the latter are executive functions, less direct executive effort and an accompanying increase in executive effectiveness are most likely to be realized through the suggested budget approach.

Coupling the strategic direction from top management with the tactical advice from operating management, the suggested budgeting approach mobilizes the creative power of all subordinates in the planning process. When the budget is completed and communicated through the hierarchy, each unit then knows what tasks must be performed, the level of effort needed, and the cost parameters as all are stated in the budget.

Additionally, the firm's management benefits from the discipline of the program planning effort. Managers are forced to review the fit of their organization and procedures to the changing business environment. The resulting benefits are important to all organizations, regardless of size, and are equally available to all who fund objectives and related tasks rather than expense categories.

FOOTNOTES

¹David Novick, *Current Practice in Program Budgeting* (New York: Crane, Russak, 1973), p. 40.

²Peter Pyrrh, *Current Practice in Program Budgeting* (New York: John Wiley, 1973), p. 142.

³Arthur Smithies, "The Role of Cost-Utility Analysis in Program Budgeting," in David Novick, ed., *Program Budgeting* (Washington, D.C.: Government Printing Office, 1965), p. 22.

⁴Philip Kotler, *Marketing Management*, 2nd ed. (Englewood Cliffs: Prentice-Hall, 1972), p. 45.

⁵Richard Still, Edward Cundiff, and Norman Govoni, *Sales Management: Decisions, Policies and Cases*, 3rd ed. (Englewood Cliffs: Prentice-Hall, 1976), pp. 475-6.

⁶Kotler, p. 287.

⁷For objective and task approach, see Cy Freeman, "You Can Determine Promotion's Role," *Industrial Marketing*, Dec. 1966, pp. 53-6.

⁸Pyrrh, pp. 149-152.

⁹Pyrrh, pp. 152-4.

¹⁰Pyrri, p. xi.

¹¹Ibid.

¹²Edward Cowan, "Zero-Base Budgeting: It Made a Difference," *New York Times*, Sect. 3, Jan. 22, 1978, p. 1.

¹³Ibid.

¹⁴For additional comments on the ZBB experience, see Allen Schick, "The Road Back From ZBB," *Public Administration Review*, March/April 1978, pp. 177-180.

INFLATION: PUBLIC ENEMY NUMBER ONE

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The American society has been said to be crisis oriented. That is, we do not become concerned about a problem until it is at the crisis stage. So it has been with inflation. In 1979 as we crossed the bridge from single to double-digit inflation, public concern has been aroused. Inflation has been declared public enemy number one, and we seem to be prepared to endure a significant recession to curtail it. We may very well be at the crisis point at which the bridge may burn behind us unless we immediately take corrective action to insure the return trip to stable prices.

Inflation may be defined as a rise in the general (average) price level. The key word in this definition is general. In the functioning of the market system, individual prices constantly move up and down, so it is only when the general price level increases that there is inflation. When inflation occurs, there is a rise in the total cost of living or, stated another way, a fall in the buying power of the dollar.

Wages and salaries tend to increase during an inflationary period and, if income increases by the same rate as the price level, consumers will maintain the same buying power. Milton Berle once defined inflation as that situation "where money will not buy as much as it used to back during the depression when we didn't have any." However, the incidence of inflation is uneven. While some prices may not increase at all, others may rise moderately, and still others may rise at a much greater rate. Similar disparities are present for wages and other forms of income. The effect is that income is redistributed so that some groups are hurt while others gain through no effort of their own. Among those especially hard hit are people on fixed income, savers and creditors. Groups that may

gain through inflation, include those whose income is very flexible, debtors and speculators.

While some individuals may seem to benefit by inflation, we are all eventually harmed by it. The balance of payments will be adversely affected as domestic prices rise relative to prices of foreign goods. Also, the uneven rate of inflation may cause a reallocation of resources from more to less efficient use. For instance, land may be taken out of use and held for speculation. Perhaps the greatest danger with inflation is that it feeds on itself. Price increases lead to demands for wage increases which lead to other price increases. A humorist once said, "Inflation is like pregnancy. It is hard to have a little bit of it." Run-away inflation can lead to a general economic breakdown.

Economists now recognize that inflation results from several different causes. Specific policies to combat inflation must be suited to the particular type of inflation. A perfectly good policy applied to the wrong type of inflation can do more harm than good.

The classic type of inflation has been termed "demand-pull." It is caused by excess demand or "too many dollars chasing too few goods." As consumers with fists full of dollars bid against each other for a limited number of goods, prices are bid up. Historically, this type of inflation occurs at the peak of the business cycle and has most often happened during wartime. Policies to combat demand-pull inflation are well established although not always successful. These policies include traditional fiscal policy actions of tax increases and/or cuts in government spending, as well as monetary policy steps to reduce the money supply and affect higher interest rates.

All of these policies are designed to reduce the level of aggregate demand and are not suited to affect a specific sector that may be a major source of inflation.

A second type of inflation has been called "cost-push." As the term implies, price increases are caused by increases in the cost of production. The increase is passed on to the consumer as higher prices even though there is no excess demand. Cost-push inflation is usually associated with monopoly power. This power may be exercised by a labor union that receives a wage increase greater than its increase in productivity, a business firm that has market power sufficient to raise its price without suffering a proportional decrease in its market share, or an international cartel that can set prices through its control of the supply. Policies to combat cost-push inflation are more difficult to establish. Generally, more competitive markets would reduce the power necessary to increase prices but institutional and technological barriers make counteraction difficult. Wage and price guidelines and controls have been tried but have had limited success. Fortunately, cost-push

inflation without great demand tends to burn itself out. Higher prices will cut back demand to the point that further price increases cannot be sustained.

When cost-push inflation is reinforced by demand-pull, there seems to be no end to the inflationary spiral. Under such circumstances, an inflation psychology may develop. Rather than being discouraged by higher prices, consumers continue to buy, reasoning that prices will be even higher in the future. Once such an attitude develops, run-away inflation may occur.

Unfortunately, there is no easy answer to our inflation dilemma. Even with all the correct policies, it may be a matter of years before inflation is brought under control. In the meantime, the short-run effects of these policies may be to slow economic growth and to cause higher rates of unemployment. One can only hope that the short-run effects will be viewed in the context of long-run inflation abatement, and that the American public will be willing to accept the required sacrifice.

ARKANSAS ECONOMIC INDICATORS

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ARKANSAS ECONOMY: Q-II, 1979

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During the second quarter of the year, the economic picture in Arkansas darkened somewhat. Consistent with the national economic situation, the various indicators offered an uncertain outlook for near-term economic conditions.

After seasonal adjustments were applied, the total employment data supplied by the Arkansas Employment Security Division showed an increase of 3.3 percent on a quarter-to-quarter basis, as compared to a national increase of only 0.2 percent. Average total employment in Arkansas for the quarter was 33,700 above the same quarter last year. However, on the negative side, manufacturing wage and salary employment declined by 1,200 jobs during Quarter II and stood at 2,050 jobs less than in the same quarter in 1978. The unemployment rate was down sharply in the second quarter to a point below the national unemployment rate for the first time since the first half of last year.

Turning to another indicator, Arkansas Personal Income, growth in the second quarter was well below the national rate of inflation. With an increase of only 0.7 percent in Total Personal Income during Quarter II, Arkansas lost relatively more purchasing power than did the U.S. as a whole. Even so, if Personal Income remains at the level of the first two quarters, it will exceed \$15 million in 1979—a 12 percent increase over 1978.

New Loans by Savings and Loan Associations increased 50.8 percent during the quarter but remained below that of the second quarter of 1978. Undoubtedly, most of the increase in loans was attributed to the availability of funds from housing bonds as net new savings in Quarter II dropped 60.4 percent below the first quarter level and was \$15.2 million below that enjoyed in Q-II, 1978.

Residential construction contracts, on a quarter-to-quarter basis, declined for the fourth consecutive quarter. Activity in this sector, even before adjustments for inflation, was at its lowest level since the last quarter of 1976.

Nonresidential construction moved upward for the second quarter in succession and was almost \$50 million, or 81.8 percent, above that for the same period in 1978. The performance of this indicator in the second quarter reached a historic high in current dollar terms. However, it should be noted that the previous record high level occurred just as we were moving into a recession in 1974.

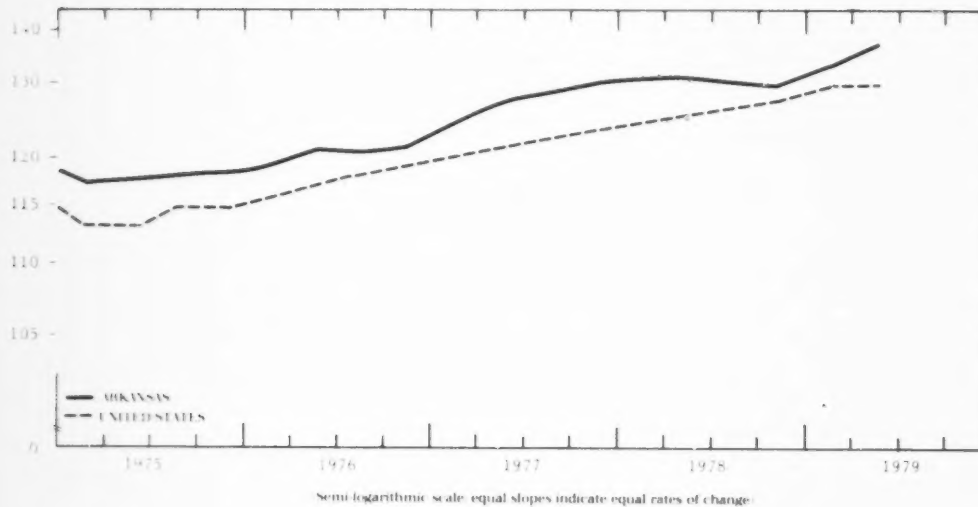
Value added by manufacture in the second quarter dropped slightly, 0.5 percent, while nationally this indicator moved up slightly, 0.3 percent. If this indicator was adjusted for inflation, it would now stand substantially below the level achieved in the same period a year ago.

River commerce grew by 9.3 percent during the quarter but most of this was attributable to internal traffic. Overall, the quantity of tonnage moving this year is below that moved in 1978.

In summary, as we approached mid-year, the economic indicators seemed to point downward. Since that time, tightening of the money supply and rise in the national unemployment rate imply that currently the level of economic activity in Arkansas may be declining. Moreover, at the present time, the outlook is for further deterioration through the first quarter of next year with an upturn perhaps near mid-year 1980.

INDEX OF TOTAL EMPLOYMENT, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



Base Year to Date and Quarterly Changes in Total Employment

Seasonally adjusted, percent

	1967 to 1979 Q-II	1978 Q-II to 1978 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Arkansas	+ 38.0	- 1.2	- 0.6	+ 2.4	+ 3.3
United States	+ 29.6	+ 0.4	+ 1.0	+ 1.0	+ 0.2

EMPLOYMENT BY MAJOR INDUSTRY GROUP IN ARKANSAS, AND UNEMPLOYMENT RATE, ARKANSAS AND UNITED STATES

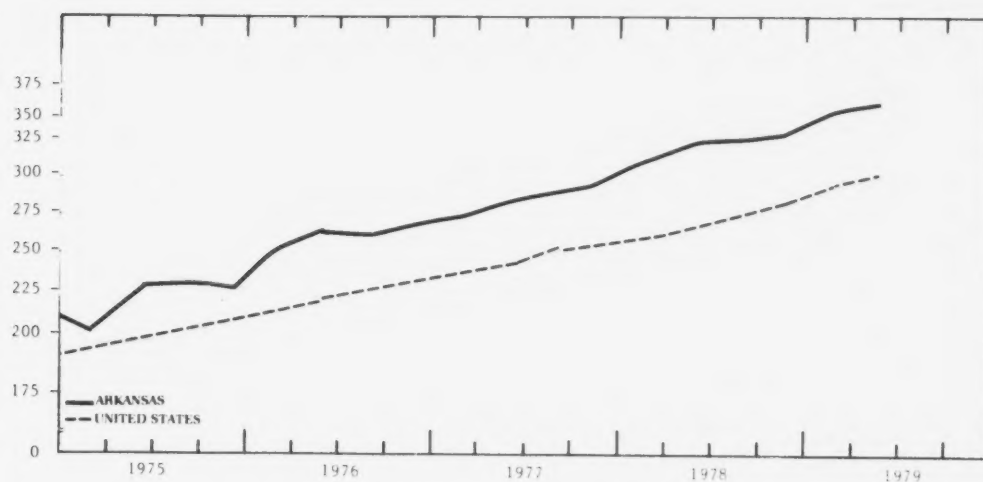
Seasonally adjusted

TIME PERIOD	EMPLOYMENT				UNEMPLOYMENT RATE	
	Wage and Salary		Agricultural	Total	Arkansas	United States
	Manufacturing	Nonmanufacturing				
1967	151,300	345,200	56,200	659,000	4.5	3.8
1968	159,100	358,800	58,900	674,100	4.3	3.6
1969	164,700	363,600	62,300	693,300	4.2	3.5
1970	165,300	367,200	57,900	693,700	5.2	4.9
1971	166,500	372,000	58,900	702,400	5.5	6.0
1972	177,250	382,900	61,375	724,850	4.9	5.7
1973	197,200	417,500	59,000	783,700	4.2	4.8
1974	201,300	432,200	56,700	786,800	5.0	5.6
1975	175,500	444,500	61,000	776,700	8.9	8.5
1976	187,300	445,100	65,600	794,000	6.2	7.7
1977	208,900	483,400	62,800	837,700	6.0	7.0
1978	216,500	507,350	61,250	868,400	6.4	6.0
Q-I	215,300	494,600	57,950	873,800	6.8*	6.2
Q-II	218,600	505,000	62,300	875,400	5.4*	5.9
Q-III	215,300	512,700	65,100	864,700	6.0*	6.0
Q-IV	216,900	517,100	59,700	859,700	7.5*	5.8
1979						
Q-I	217,750	517,150	64,450	880,450	7.2*	5.7
Q-II	216,550	522,300	66,500	909,100	5.3*	5.7

*Actual Rate. Effective January 1977 the Arkansas Employment Security Division revised its adjustments to employment data based on methods developed by the U.S. Bureau of Labor Statistics. As a result, the Arkansas unemployment rate cannot be seasonally adjusted at this time.

INDEX OF PERSONAL INCOME, ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



Semi-logarithmic scale: equal slopes indicate equal rates of change

Base Year to Date and Quarterly Changes in Personal Income

	1967 to 1979 Q-II	1978 Q-II to 1978 Q-III	Seasonally adjusted, percent 1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Arkansas	+ 258.6	+ 5.2	+ 2.6	+ 5.9	+ 0.7
United States	+ 200.7	+ 2.7	+ 3.4	+ 3.7 ^R	+ 2.2

PERSONAL INCOME IN ARKANSAS

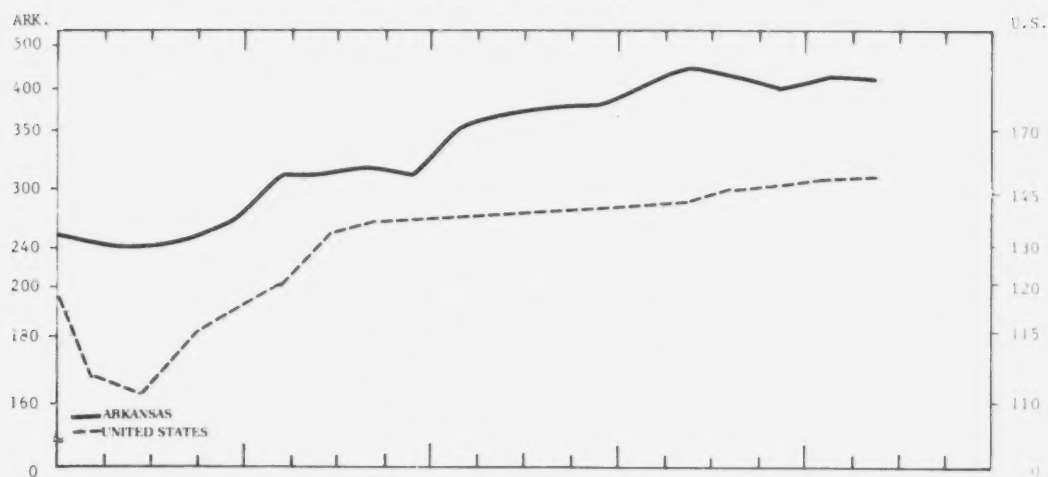
Millions of dollars, seasonally adjusted

Quarter	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Jan-Mar	1,288	1,446	1,585	1,789	2,142	2,070	2,508	2,837	3,183	3,772
Apr-Jun	1,379	1,474	1,599	1,894	2,242	2,373	2,667	2,948	3,299	3,798
Jul-Sep	1,415	1,528	1,662	1,978	2,213	2,391	2,626	2,984	3,472	
Oct-Dec	1,435	1,557	1,794	2,020	2,234	2,368	2,676	3,070	3,562	
Annual	5,517	6,005	6,640	7,681	8,831	9,202	10,477	11,839	13,516	

^RRevised based on updated state personal income data, Survey of Current Business, April 1979, p. 20.

INDEX OF VALUE ADDED BY MANUFACTURE, ARKANSAS, AND INDEX OF MANUFACTURING PRODUCTION, UNITED STATES

Quarterly data, seasonally adjusted, 1967 = 100



(Semi-logarithmic scale: equal slopes indicate equal rates of change)

Base Year to Date and Quarterly Changes in Manufacturing

Seasonally adjusted, percent

	1967 to 1979 Q-II	1978 Q-II to 1978 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Arkansas	+ 322.5	- 2.4	- 1.3	+ 4.3	- 0.5
United States	+ 51.8	+ 2.1	+ 1.9	+ 1.3	+ 0.3

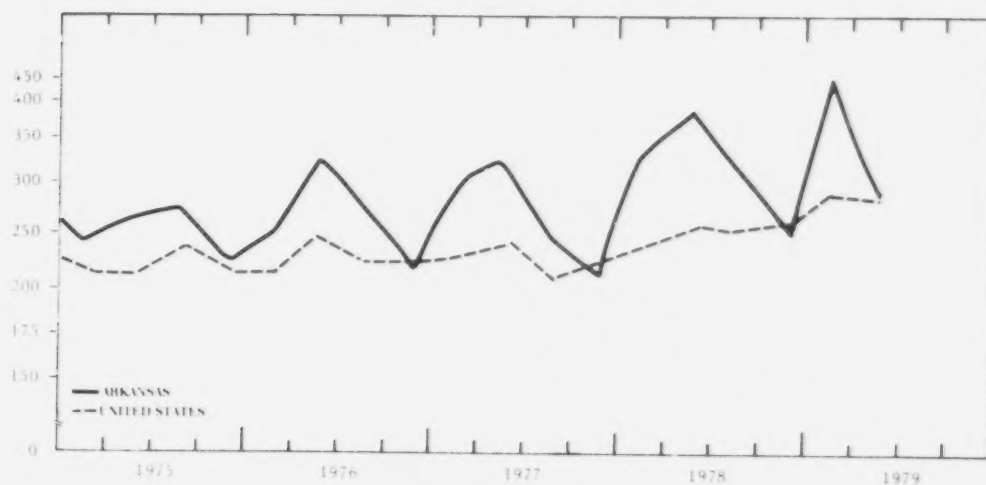
VALUE ADDED BY MANUFACTURE IN ARKANSAS

Millions of dollars

Quarter	Seasonally adjusted										Not seasonally adjusted
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	
Jan-Mar	521.7	578.9	728.7	825.9	959.6	899.5	1,158.2	1,362.9	1,598.4	1,666.0	1,516.0
Apr-Jun	532.5	581.8	724.9	858.4	975.8	895.1	1,161.4	1,443.1	1,659.2	1,656.2	1,623.1
Jul-Sep	536.1	609.5	704.0	819.3	963.0	925.7	1,194.4	1,451.8	1,619.3		
Oct-Dec	552.3	644.5	724.7	856.9	924.0	985.2	1,160.8	1,468.6	1,597.3		
Annual	2,142.6	2,414.7	2,882.3	3,360.5	3,822.4	3,705.5	4,674.8	5,726.4	6,474.2		

INDEX OF CASH RECEIPTS FROM FARM MARKETINGS ARKANSAS AND UNITED STATES

Quarterly data, seasonally adjusted 1967 = 100



Semi-logarithmic scale: equal slopes indicate equal rates of change

Base Year to Date and Quarterly Changes in Cash Receipts

Seasonally adjusted, percent

	1967 to 1979 Q-II	1978 Q-II to 1978 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Arkansas	+ 207.1	- 19.8	- 16.6	+ 71.1	- 30.8
United States	+ 205.8	- 1.8	+ 8.9	+ 6.6	+ 4.1

CASH RECEIPTS FROM FARM MARKETINGS IN ARKANSAS

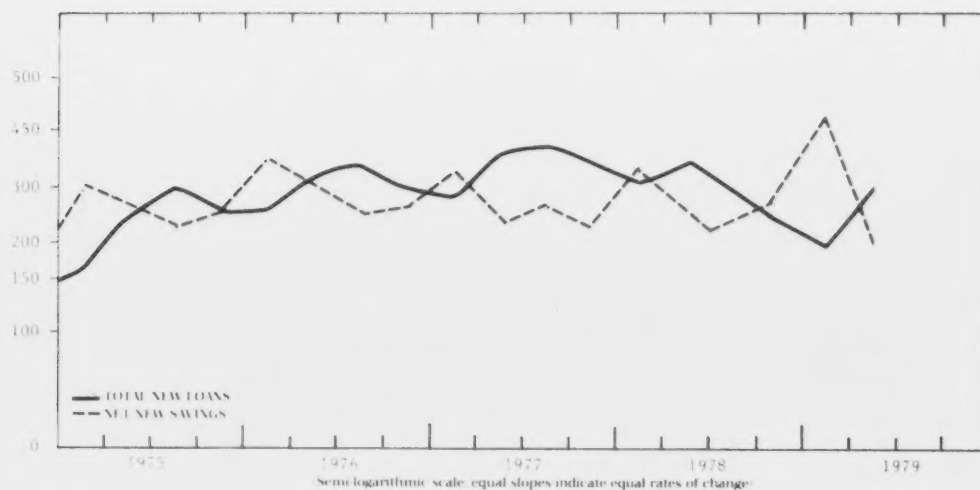
Thousands of dollars

Quarter	Seasonally adjusted								Not seasonally adjusted
	1971	1972	1973	1974	1975	1976	1977	1978	
Jan-Mar	262,963	314,037	385,687	718,418	529,492	565,575	686,105	790,387	1,028,938
Apr-Jun	313,908	323,552	488,760	705,678	584,346	740,954	703,457	899,118	711,622
Jul-Sep	272,248	323,286	554,500	568,678	609,324	621,624	578,357	721,275	463,866
Oct-Dec	308,094	369,370	580,100	618,796	508,651	497,214	500,169	601,443	
Annual	1,157,213	1,330,245	2,009,047	2,611,570	2,231,813	2,425,367	2,468,088	3,012,223	

INDEXES OF ACTIVITY OF ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

TOTAL NEW LOANS AND NET NEW SAVINGS

Quarterly data, not seasonally adjusted 1967 = 100



Base Year to Date and Quarterly Changes in Activity of Arkansas S & L Associations

Not seasonally adjusted, percent

	1967 to 1979 Q-I	1978 Q-I to 1978 Q-III	1978 Q-III to 1979 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Total New Loans	+ 201.6	- 17.5	- 8.3	- 28.2	+ 50.8
Net New Savings	+ 85.7	+ 1.0	+ 17.2	+ 60.4	- 60.4

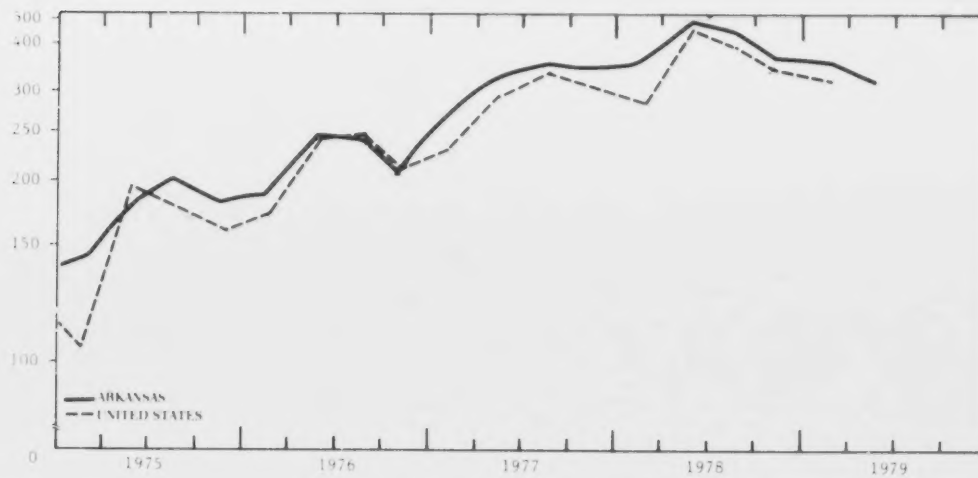
ECONOMIC ACTIVITY OF ARKANSAS SAVINGS AND LOAN ASSOCIATIONS

Thousands of dollars

TIME PERIOD	TOTAL NEW LOANS		NET NEW SAVINGS	
	Current \$	1967 \$	Current \$	1967 \$
1973	384,229	287,788	223,736	168,993
1974	300,152	203,915	188,400	128,872
1975	413,366	255,678	309,304	192,119
1976	606,400	355,280	393,300	231,050
1977	815,800	448,590	405,000	223,492
1978	729,300	373,700	416,900	213,610
Q-I	173,600	92,100	118,000	62,600
Q-II	211,000	109,100	91,400	47,300
Q-III	178,100	89,980	94,500	47,740
Q-IV	166,600	82,520	113,000	55,970
1979				
Q-I	122,600	59,240	185,830	89,785
Q-II	191,200	89,300	76,200	35,590

INDEX OF RESIDENTIAL CONSTRUCTION CONTRACTS ARKANSAS AND UNITED STATES

Quarterly data, not seasonally adjusted 1967 = 100



Semi-logarithmic scale; equal slopes indicate equal rates of change

Base Year to Date and Quarterly Changes in Residential Construction

	Not seasonally adjusted, percent				
	1967 to 1979 Q-II	1978 Q-II to 1978 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Arkansas	+ 228.7	- 11.5	- 13.8	- 10.6	- 4.8
United States	+ 224.3	- 10.3	- 12.1	- 8.8	N.A.

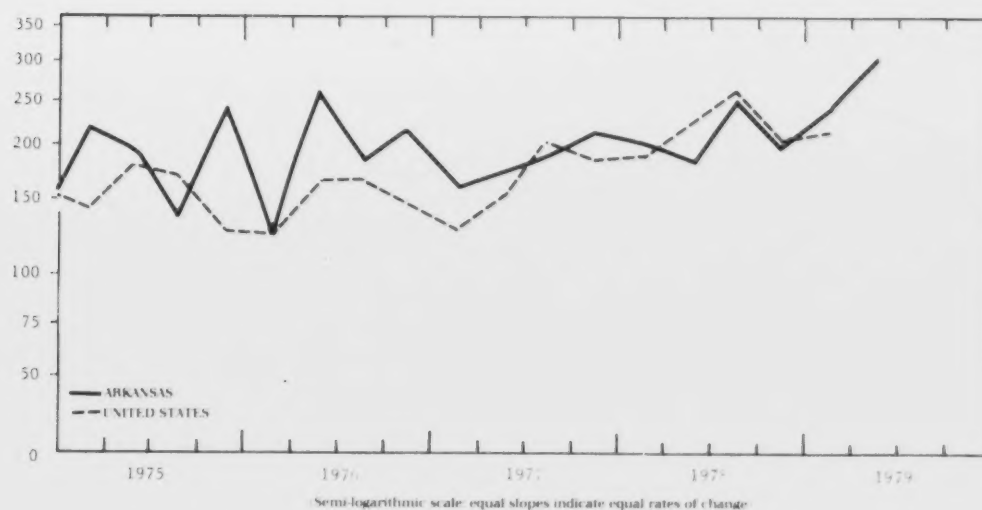
RESIDENTIAL CONSTRUCTION CONTRACTS IN ARKANSAS

	Thousands of dollars								Not seasonally adjusted	
	Seasonally adjusted									
Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979	1979
Jan-Mar	70,885	105,596	124,660	93,249	84,488	116,379	160,861	220,739	205,119	185,964
Apr-Jun	77,081	123,735	122,990	94,963	85,740	117,164	173,558	236,915	153,917	177,105
Jul-Sep	93,567	127,702	111,070	84,214	98,557	122,732	182,210	227,633		
Oct-Dec	112,722	143,130	91,317	82,505	104,656	134,927	217,222	236,718		
Annual	354,925	500,163	450,037	354,931	373,441	491,202	733,851	922,005		

INDEX OF NONRESIDENTIAL CONSTRUCTION CONTRACTS

ARKANSAS AND UNITED STATES

Quarterly data, not seasonally adjusted 1967 = 100



Base Year to Date and Quarterly Changes in Nonresidential Construction Contracts

	Not seasonally adjusted, percent				
	1967 to 1979 Q-II	1978 Q-II to 1978 Q-III	1978 Q-III to 1978 Q-IV	1978 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Arkansas	+ 205.3	+ 49.6	- 23.7	+ 28.9	+ 23.6
United States	+ 127.1	+ 10.8	- 17.5	+ 7.6	N.A.

NONRESIDENTIAL CONSTRUCTION CONTRACTS

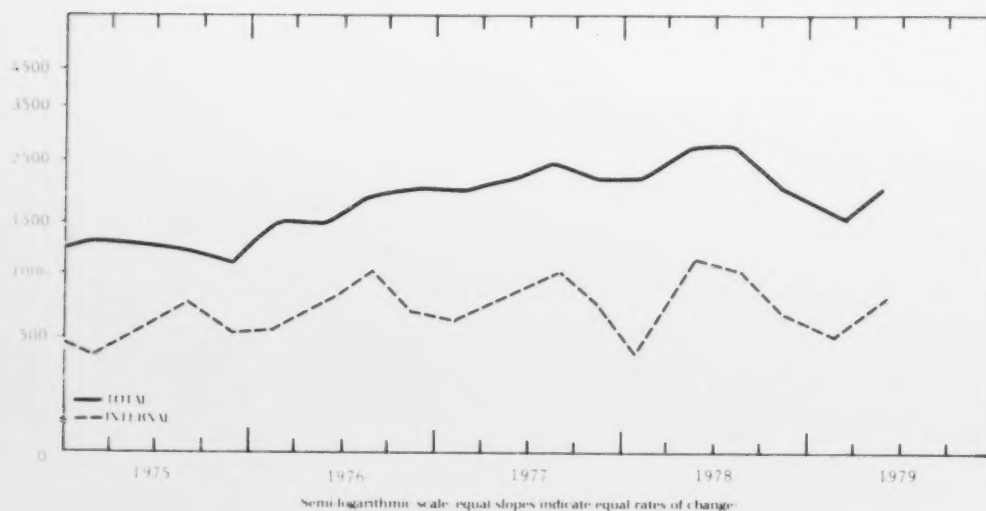
IN ARKANSAS

Thousands of dollars, not seasonally adjusted

Quarter	1971	1972	1973	1974	1975	1976	1977	1978	1979
Jan-Mar	24,546	33,213	47,676	56,094	79,225	43,591	57,486	72,851	88,988
Apr-Jun	52,512	45,800	40,140	63,607	67,424	93,906	63,726	60,479	109,976
Jul-Sep	28,546	51,564	63,776	106,530	45,566	67,913	67,632	90,471	
Oct-Dec	37,632	57,002	54,446	46,247	89,446	79,004	76,866	69,041	
Annual	143,236	187,579	206,038	272,478	281,661	284,414	265,710	292,842	

WATERBORNE COMMERCE McCLELLAN-KERR ARKANSAS RIVER NAVIGATION SYSTEM

Quarterly data in thousands of short tons, not seasonally adjusted



Base Year to Date and Quarterly Changes in Total and Internal Tonnages

	Not seasonally adjusted, percent				
	Base: Ave Qtr 1971				
	1971 to 1979 Q-III	1978 Q-III to 1978 Q-III	1978 Q-III to 1978 Q-IV	1979 Q-IV to 1979 Q-I	1979 Q-I to 1979 Q-II
Total	+ 111.4	+ 0.3	- 23.2	- 11.9	+ 9.3
Internal	+ 20.5	- 16.8	- 25.7	- 25.8	+ 45.3

FREIGHT TRAFFIC ARKANSAS RIVER COMMERCE

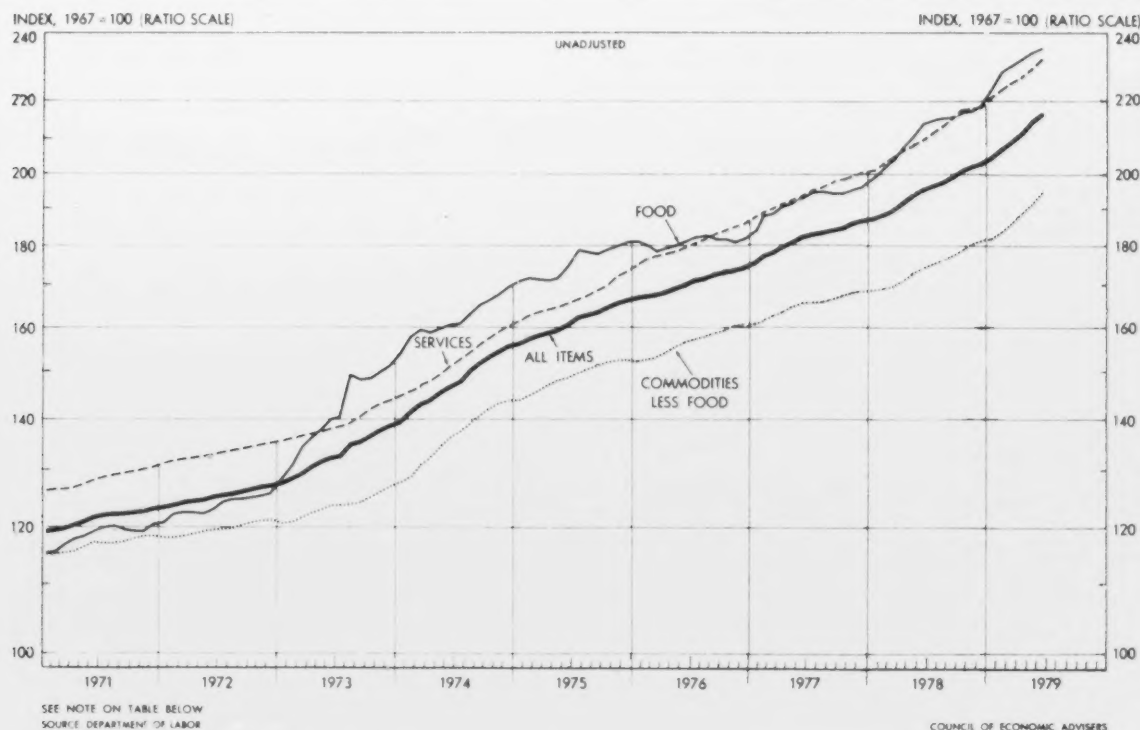
Thousands of short tons, not seasonally adjusted

TIME PERIOD	TRAFFIC TONNAGES*			
	INBOUND	OUTBOUND	INTERNAL	TOTAL
1972	1,174	1,031	3,463	5,668
1973	1,802	656	2,674	5,132
1974	1,950	775	2,959	6,060
1975	1,440	870	2,465	5,204
1976	1,988	1,663	3,033	7,078
1977	2,841	2,339	3,463	9,138
1978	2,595	3,899	3,170	10,216
Q-I	750	935	481	2,332
Q-II	699	855	1,098	2,843
Q-III	654	1,193	913	2,851
Q-IV	492	916	678	2,190
1979				
Q-I	476	720	503	1,930
Q-II	477	785	731	2,109

*Total tonnage includes "through traffic"--shipments which originate and terminate outside the Arkansas River Commerce Area.

CONSUMER PRICES

In June, the consumer price index for all urban consumers rose 1.2 percent (1.0 percent seasonally adjusted). Food prices increased 0.5 percent (0.2 percent seasonally adjusted). Nonfood commodity prices rose 1.6 percent (1.3 percent seasonally adjusted) and services prices were up 1.1 percent (1.0 percent seasonally adjusted).



[1967=100]

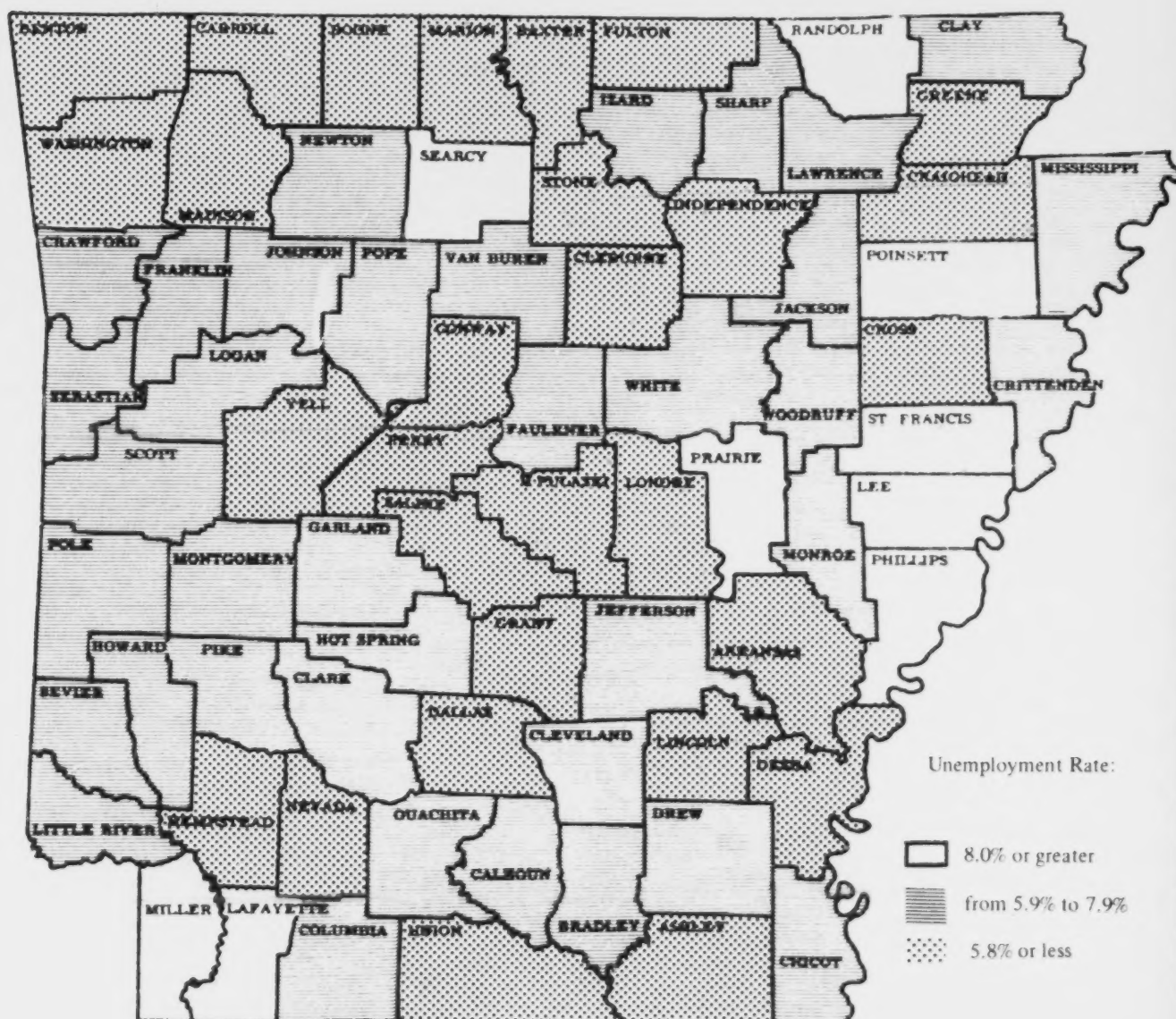
Period	All items	Food	Commodities less food	Services	All commodities	Food			Commodities less food			Services
						All	Food at home	Food away from home	All	Durable	Non-durable	
1971	121.3	118.4	116.8	128.4	117.4	118.4	116.4	126.1	116.8	116.5	117.0	128.4
1972	125.3	123.5	119.4	133.3	120.9	123.5	121.6	131.1	119.4	118.9	119.8	133.3
1973	133.1	141.4	123.5	139.1	129.9	141.4	141.4	141.4	123.5	121.9	124.8	139.1
1974	147.7	161.7	136.6	152.1	145.5	161.7	162.4	159.4	136.6	130.6	140.9	152.1
1975	161.2	175.4	149.1	166.6	158.4	175.4	175.8	174.3	149.1	145.5	151.7	166.6
1976	170.5	180.8	156.6	180.4	165.2	180.8	179.5	186.1	156.6	154.3	158.3	180.4
1977	181.5	192.2	165.1	194.3	174.7	192.2	190.2	200.3	165.1	163.2	166.5	194.3
1978	195.4	211.4	174.7	210.9	187.1	211.4	210.2	218.4	174.7	173.9	174.3	210.9
Unadjusted												
1978: June	195.3	213.8	174.4	209.9	186.9	213.5	213.1	218.0	173.7	173.0	173.6	210.5
July	196.7	215.0	175.4	211.7	187.7	213.7	212.7	219.5	174.7	174.2	174.5	212.2
Aug	197.8	215.4	176.3	213.4	188.7	214.6	213.2	221.4	175.7	175.3	175.4	213.8
Sept	199.3	215.6	177.8	215.6	190.2	216.0	214.5	223.1	177.2	176.8	176.5	215.7
Oct	200.9	216.8	179.1	217.6	191.7	217.9	216.5	224.7	178.5	178.3	177.4	217.6
Nov	202.0	217.8	180.3	218.6	193.0	219.2	217.8	226.0	179.8	180.1	178.3	218.7
Dec	202.9	219.4	181.3	219.2	194.6	221.3	220.1	227.8	181.3	181.6	179.4	219.5
Seasonally adjusted												
1979: Jan	204.7	223.9	181.9	221.1	196.7	224.5	223.7	230.7	182.9	183.3	181.4	220.7
Feb	207.1	228.2	183.7	223.3	199.1	228.1	227.7	233.6	184.8	185.1	182.9	223.1
Mar	209.1	230.1	185.9	225.1	201.3	230.5	230.0	236.2	186.9	186.0	186.4	225.1
Apr	211.5	232.3	188.9	227.0	203.8	232.7	232.4	238.2	189.4	187.6	190.0	227.2
May	214.1	234.3	191.6	229.5	205.7	234.3	233.5	240.9	191.4	188.6	193.4	230.1
June	216.6	235.4	194.7	232.1	207.7	234.7	233.2	242.9	193.9	190.1	197.4	232.5

NOTE.—Beginning January 1978 data relate to all urban consumers. Earlier data related to urban wage earners and clerical workers.

Source: Department of Labor, Bureau of Labor Statistics.

PRELIMINARY LABOR FORCE ESTIMATES--JUNE 1979

Arkansas' total employment numbered 941,500 in June—dropping 4,100 from the May level of 945,600. Accompanying this decline in employment was a rise in unemployment of 10,300 which pushed the level of jobless workers to 56,700. Statewide, the jobless rate was 5.7 percent and the national unemployment rate was 5.6 percent. Unemployment rates for the 75 counties ranged from a low of 3.7 percent in Saline and Washington Counties to a high of 15.2 percent in Poinsett County. Thirty-one counties had rates equal to or less than the State rate of 5.7 percent. Twenty-five counties had jobless rates between 5.8 percent and 6.9 percent; ten counties recorded unemployment rates between 7.0 percent and 7.9 percent. Only nine counties were estimated with rates equal to or above 8.0 percent.



PRELIMINARY LABOR FORCE ESTIMATES-JUNE 1979

State and SMSA's	Civilian Labor Force	Unemployment Rate	Total Employment
UNITED STATES	104,153,000	6.0	97,917,000
STATE OF ARKANSAS	998,200	5.7	941,500
Fayetteville-Springdale SMSA (Benton & Washington Counties)	75,950	3.8	73,100
Fort Smith SMSA (Crawford & Sebastian Counties in Arkansas and Le Flore and Sequoyah Counties in Oklahoma)	86,650	7.0	80,550
Little Rock-North Little Rock SMSA (Pulaski & Saline Counties)	190,900	4.0	183,200
Pine Bluff SMSA (Jefferson County)	39,300	6.0	36,950

County	Civilian Labor Force	Unemployment Rate	Total Employment	County	Civilian Labor Force	Unemployment Rate	Total Employment
Arkansas	12,975	4.8	12,350	Lee	5,200	8.2	4,775
Ashley	10,900	5.7	10,275	Lincoln	3,900	5.1	3,700
Baxter	10,200	5.1	9,675	Little River	5,225	7.2	4,850
Benton	31,150	3.9	29,950	Logan	7,400	7.1	6,875
Boone	11,900	3.8	11,450	Lonoke	15,800	3.8	15,200
Bradley	5,975	6.3	5,600	Madison	4,775	4.7	4,550
Calhoun	2,075	6.0	1,950	Marion	5,150	4.4	4,925
Carroll	7,600	3.9	7,300	Miller	14,725	8.0	13,550
Chicot	7,075	6.4	6,625	Mississippi	26,700	5.9	25,125
Clark	8,975	6.4	8,400	Monroe	5,375	6.0	5,050
Clay	9,100	6.0	8,550	Montgomery	2,500	6.0	2,350
Cleburne	6,125	5.7	5,775	Nevada	4,275	5.3	4,050
Cleveland	2,075	7.2	1,925	Newton	3,375	5.9	3,175
Columbia	13,175	5.9	12,400	Ouachita	12,075	7.9	11,125
Conway	7,450	5.4	7,050	Perry	2,925	5.1	2,775
Craighead	31,575	5.2	29,925	Phillips	13,200	10.0	11,875
Crawford	15,800	6.6	14,750	Pike	4,150	7.2	3,850
Crittenden	24,325	5.1	23,075	Poinsett	11,375	15.2	9,650
Cross	9,825	5.1	9,325	Polk	6,275	6.4	5,875
Dallas	4,350	5.7	4,100	Pope	17,150	7.7	15,825
Desha	7,925	5.4	7,500	Prairie	3,625	11.7	3,200
Drew	8,300	6.0	7,800	Pulaski	167,900	4.1	161,050
Faulkner	19,650	6.1	18,450	Randolph	7,675	8.1	7,050
Franklin	6,000	6.7	5,600	St. Francis	13,450	8.7	12,275
Fulton	3,225	5.4	3,050	Saline	23,000	3.7	22,150
Garland	29,250	6.1	27,475	Scott	3,125	7.2	2,900
Grant	4,750	5.3	4,500	Searcy	2,525	8.9	2,300
Greene	14,100	5.7	13,300	Sebastian	42,600	6.9	39,650
Hempstead	10,575	5.2	10,025	Sevier	6,125	6.5	5,725
Hot Spring	11,075	6.1	10,400	Sharp	4,275	5.8	4,025
Howard	7,625	5.9	7,175	Stone	3,275	4.6	3,125
Independence	14,550	4.3	13,925	Union	24,000	5.0	22,800
Izard	3,950	6.3	3,700	Van Buren	3,950	7.6	3,650
Jackson	9,925	6.3	9,300	Washington	44,800	3.7	43,150
Jefferson	39,300	6.0	36,950	White	21,050	7.5	19,475
Johnson	7,450	6.4	6,975	Woodruff	4,975	6.5	4,650
Lafayette	3,950	10.8	3,525	Yell	8,025	5.0	7,625
Lawrence	8,050	7.5	7,450				

Source: The Research and Statistics Section, Arkansas Employment Security Division.